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Breaking The Nation's Oil Addiction: Is Ethanol The Cure?

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The views expressed in this article are those of the author and do not reflect the official policy or position of the United States Air Force, Department of Defense, or the U.S. Government

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I. Introduction

High gas prices, instability in the Middle East, growing concerns over the environment, amidst this backdrop the Clean Air Act (CAA) Amendments of 1977 were born. [1] Fast forward thirty plus years. Once again the United States finds itself suffering from high gas prices. It is entrenched in Middle East affairs in an effort to stabilize that region of the world. Now the nation faces the major environmental problem of global warming stemming from its burning of fossil fuel.

Many people conclude the nation's motor gasoline consumption lies at the root of the current dilemma. Although nearly everyone tackling this issue agrees that there is no silver bullet, which will solve the nation's addiction to petroleum.[2] A growing number of

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[1] Pub. L. No. 95-95, 91 Stat. 685 (1977).

[2] "Biomass is not a silver bullet, but biomass has unique quality among renewable fuel." *See* David Morris, Vice-President, Inst. for Local Self Reliance, Address at NGCA Renewable Fuels Forum (August 23, 2005), *available at* http://www.newrules.org/podcast/05-08-23pressclub.html

advocates point to alternative fuels as a possible means to break the cycle of oil dependence. The use of such fuels may lower gas prices, strengthen national security, and address environmental issues that are associated with burning fossil fuels.

Currently, ethanol is the alternative fuel grabbing headlines. Ethanol supporters are at every level of government as well as in the business arena. But, can ethanol really free the nation from oil's grip? Can it delivery on its promise of a cheaper and cleaner fuel source?

This paper begins by looking at the current state of the nation, as it relates to its oil usage. The paper will then focus on various efforts employed at the federal and state governmental levels to promoting ethanol use. It will consider the pros and cons of the various approaches and examine the politics at various levels behind the ethanol push. Finally, this paper will address the question whether ethanol can help break the nation's oil addition.

II. Overview of the Problem

In 2005, the United States consumed an average of 20.6 million barrels per day (bbl/d) of oil.[3] Motor gasoline consumption accounted for 9.1 million bbl/d or forty-four percent of this total. [4] The current gas price averages $2.98 a gallon.[5] This is a sixty-seven cent increase from a year ago.[6] With U.S. oil production declining and demand increasing, U.S. net oil imports are climbing steadily.[7]

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[3] Energy Information Administration, *United States Oil* (Nov 2005), http://www.eia.doe.gov/emeu/cabs/Usa/Oil.html

[4] *Id.*

[5] Energy Information Administration, *Petroleum* (as of 7/17/06), *available at* http://www.eia.doe.gov/oil_gas/petroleum/data_publications/wrgp/mogas_home_page.html

[6] *Id.*

[7] Energy Information Administration, *supra* note 3.

In 2003, the U.S. import of energy-related petroleum products, accounted for over twenty-five percent of the $490 billion total U.S. goods and services trade deficit.[8] The nation's dependence on oil has resulted in the transfer of $1.16 trillion to oil-producing countries over the last three decades. This transfer of wealth is expected to continue as the nation's foreign oil dependency increases.[9] The U.S. Department of Energy (DOE) estimates that every one billion dollars of trade deficit costs the nation 27,000 jobs.[10] In 2003, the importation of foreign petroleum products cost the nation 3.5 million jobs.[11]

Furthermore, U.S. dependence on oil supplies and production facilities concentrated in the Persian Gulf makes defense of this area a high priority for the U.S. military.[12] In 2004, despite being the world's third largest crude oil producer, "less than forty percent of crude oil used by U.S. refineries was produced in the United States." [13] Roughly nineteen percent of crude oil used by U.S. refineries came from the Persian Gulf.[14] While it is clear that a portion of the U.S. military budget is used in protecting access to Persian Gulf oil, the magnitude of this value is difficult to agree on.[15] Analysts' estimates for the cost of maintaining an uninterrupted flow of oil from the Gulf region vary widely, from less than $0.5 billion to $70 billion annually. [16]

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[8] Governors' Ethanol Coalition, Proposal, at 3 (2004), *available at* http://www.ethanol-gec.org/information/hewlettproposal.pdf (last visited July 17, 2006).
[9] *Id.* at 3.
[10] *Id.* at 3.
[11] *Id.* at 3.

[12] *Id.* at 3.
[13] Energy Information Administration, *Where Does My Gasoline Come From?* (June 2005), *available at* http://www.eia.doe.gov/neic/brochure/gas04/gasoline.htm
[14] Governors' Ethanol Coalition, *supra* note 8, at 3.
[15] *Id.* at 3.
[16] *Id.* at 3.

Some profess past oil supply disruption in the Persian Gulf region, (i.e. the Arab oil embargo, Iranian Revolution, Persian Gulf War, and the Iraqi invasion of Kuwait) resulted in subsequent oil price hikes followed by economic recessions.[17] According to DOE, oil dependence has cost the nation $3.4 trillion over the past three decades. [18]

Economic costs (i.e. job loss and high gas prices) and national security fears, stemming from dependence on unstable foreign oil markets, serve as the key motivating factors behind the renewed call for a change in the nation's oil use policy. In addition, environmental groups cite fossil fuel burning, as a major source of Carbon Dioxide (CO_2), which contributes to the global warming phenomenon. [19] According to DOE, CO_2 emissions from the transportation sector are the largest source of energy-related carbon dioxide emissions.[20] At 1,933.7 million metric tons (MMT), the transportation sector accounted for thirty-three percent of total U.S. energy-related CO_2 emissions in 2004. [21] Transportation sector emissions increased by 3.1 percent in 2004 relative to the 2003 level of 1,875.7 MMT. Ninety-eight percent of transportation sector's CO_2 emissions result from the consumption of petroleum products.[22] In 2004, sixty percent of the total transportation sector's emissions came from motor gasoline.[23] According to some

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[17] *Id.* at 3.
[18] *Id.* at 3.
[19] Sierra Club, *Driving Up the Heat: SUVs and Global Warming*, http://www.sierraclub.org/globalwarming/suvreport/pollution.asp
[20] Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2004 - Executive Summary,* (March 2006), *available at* http://www.eia.doe.gov/oiaf/1605/ggrpt/summary/pdf/0573(2004)es.pdf
[21] *Id.*
[22] *Id.*
[23] *Id.* (total 1,162.6 MMT)

experts, carbon emissions are projected to rise from 500 MMT to 1000 MMT by 2050. [24] Currently, the U.S. accounts for twenty-two percent of the world's CO_2 emissions. [25]

According to EPA, the only practical way of making a meaningful reduction in motor vehicle emissions of CO_2 is to increase fuel economy. [26] However, federal law grants the U.S. Department of Transportation (DOT) (and not the EPA) the power to establish the fuel economy standards referred to as Corporate Average Fuel Economy (CAFÉ) standard.[27]

From 1985 to 2005 CAFÉ standards remained at 27.5 miles per gallon (mpg) for passenger cars.[28] CAFÉ program subjected light duty trunks and SUVs under 8500 pounds to a lower fuel economy standard than cars.[29] Light duty trucks and SUVs that exceed 8500 pounds were exempt from the regulation. Over the years, the number of SUVs and light vehicles on US roads has dramatically increased. In 2005, SUVs and other light trucks comprised 54.5% of the market. [30]

In 2006, DOT reformed the structure of the CAFE program for light trucks and SUVs. It established slightly higher CAFE standards for model years (MY) 2008-2011 for this class of vehicles.[31] The administration asserts the changes will result in a saving

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[24] Gary A. Herwick, *Ethanol from Biomass: Potential Availability and Benefits* (Jan 2005), *available at* http://www.ethanol-gec.org/information/herwick_gm_1-27-05.ppt

[25] *Id.*

[26] Sholnn Freeman, *States Adopt California's Greenhouse Gas Limits*, Washington Post, at D01 (Jan. 3, 2006), *available at* http://www.washingtonpost.com/wp-dyn/content/article/2006/01/02/AR2006010201467.html

[27] Appellate Brief at 15, Commonwealth of Massachusetts v. E.P.A., No. 03-1361, (D.C. Cir 2005).

[28] Daniel Ramish, *Government Regulatory Initiatives Encouraging The Development And Sale Of Gas/Electric Hybrid Vehicles: Transforming Hybrids From A Curiosity To An Industry Standard,* 30 Wm. & Mary Envtl. L. & Pol'y Rev. 231, 264 (2005)

[29] *Id.* at 265.

[30] MSNBC.com, *Gas Prices Eat Into Sales of Large SUVs* (Mar. 15, 2005), *available at* http://www.msnbc.msn.com/*Id*/7181566/

[31] National Highway Traffic Safety Administration, *Light Truck Fuel Economy Standard Rulemaking*, (2006), http://www.nhtsa.dot.gov/portal/site/nhtsa/menuitem.d0b5a45b55bfbe582f57529cdba046a0/

10.7 million barrels of oil over the next ten years.[32] However, many environmentalists view the changes as doing little to address the issues of reducing CO_2 emissions and reducing the nation's oil dependency in light of the "dual-fuel vehicle" loophole provision. [33]

Thus, the stage is set. More gas-guzzling vehicles are on U.S. roads, as well as a sharp increase in the average vehicle mile traveled (VMT) by Americans. [34] This is a trend experts predict will continue for years to come. Furthermore, the increase number of vehicles will lead to more CO_2 emissions and greater dependence on foreign oil, in order to fuel the American way of life. This anticipated increase comes at a time when emerging markets (such as China and India) look to compete for and consume greater quantities of the same foreign oil.

So what are lawmakers at various governmental levels proposing to help combat this mounting oil dependency crisis? In recent years, the focus is on alternative fuel and the vehicles powered by them.

("Under the Reformed CAFE, fuel economy standards are restructured so that they are based on a measure of vehicle size called "footprint," the product of multiplying a vehicle's wheelbase by its track width. A target level of fuel economy is established for each increment in footprint. Smaller footprint light trucks have higher targets and larger ones, lower targets.")

[32] Press Release, *New Light Truck Economy Standards to Save 10.7 Billion Gallons of Fuel, Include Largest SUVs for First Time Ever, Transportation Secretary Mineta Announces, available at* http://nhtsa.gov/portal/ site/nhtsa/template.MAXIMIZE/menuitem.f2217bee37fb302f6d7c121046108a0c/?javax.portlet.tpst=1e51531b2220b0f8ea14201046108a0c_ws_MX&javax.portlet.prp_1e51531b2220b0f8ea14201046108a0c_viewID=detail_view&javax.portlet.begCacheTok=token&javax.portlet.endCacheTok=token&itemID=59a1dc6e1924a010VgnVCM1000002c567798RCRD&overrideViewName=PressRelease

[33] The Union of Concerned Scientist argues that the "'dual-fuel vehicle' loophole giving automakers credit for producing vehicles capable of running on alternative fuel but that almost never do. This provision will increase our gasoline consumption by 10 billion gallons through 2015! Ironically this amount will wipe out the savings the administration claims will be achieved by [the]… changes to fuel economy regulation." *See* The Union of Concerned Scientist, *UCS and the Energy Bill*, http://www.ucsusa.org/ clean_energy/clean_energy_policies/energy-bill-2005.html (Last updated Nov. 17, 2005).

[34] FOXnews.com, *Still Thirsty: U.S. Consumers Still Buying Gas Guzzlers* (April 24, 2006), http://www.foxnews.com/story/0,2933,192896,00.html

The Energy Policy Act of 1992 (EPAct) defines alternative fuels to includes the following: ethanol, natural gas, propane, hydrogen, biodiesel (B100), electricity, methanol, and p-series fuels.[35] The EPAct took a lead by example approach to alternative fuel usage. The act required federal fleets to acquire alternative fuel vehicles, which are capable of operating on non-petroleum fuels.[36] This approach has been echoed in subsequent executive orders and legislation.[37] However, during the ensuing years in which gasoline prices remained low, alternative fuel received little attention. In recent years all this has change and it is ethanol that has emerged as the alternative fuel of choice for a number of policymakers and key segments of big business.

III. Ethanol: The American Corn Farmers And Domestic Automakers Fuel Of Choice

For decades, the American corn farmers have attempted to raise awareness of ethanol's viability as both a fuel oxygenate additive and as a replacement for conventional gasoline. Organizations, such as American Corn Growers Association and the National Corn Growers Association, advocate for increase use of ethanol as a gasoline replacement. While in the past, such efforts garnered little significant support beyond the Midwest; the tide appears to have changed. In President George W. Bush's 2006 State of the Union Address, he emphasized the need to "change how [the nation] power[s] our automobiles."[38] He pledged to "fund additional research in cutting-edge methods of producing ethanol, not just from corn, but from wood chips and stalks, or switch grass."[39] The President, in his address, established a goal "to make this new kind

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[35] Pub. L. No. 102-486, 106 Stat. 2776 § 301 (1992).
[36] Dep't of Energy, Federal Fleet Requirements, http://www1.eere.energy.gov/vehiclesandfuels/epact/federal/index.html (Last Updated May 8, 2006)
[37] *See.* Exec. Order No. 13149, 65 Fed. Reg. 24607 (Apr. 26, 2000)
[38] President George W. Bush, State of the Union Address, (2006) *available at* http://whitehouse.gov/news/releases/2006/01/2006131-10.html
[39] *Id.*

of ethanol practical and competitive within six years." [40] In April 2006, in a presentation before Renewable Fuels Association (RFA), the President stated, "I set a goal to replace oil from around the world. The best way and the fastest way to do so is to expand the use of ethanol."[41] While the President's support has come as a surprise to some, it is the support ethanol has received in the business world that has help propel it to the front of the national alternative fuel discussion.

The ethanol movement has found a powerful ally in the form of the domestic automakers industry, which for years vigorously fought against efforts to bringing alternative fuels technology such as Battery Electric Vehicles (BEV), Low Emission Vehicle (LEV) and Hydrogen fueled Alternative Fuel Vehicles (AFV) to the market. Domestic automobiles companies such as GM head the charge for ethanol use. GM recently launched a multimillion dollar campaign "Live Green Go Yellow" in an effort to raise public awareness of the benefits of the alternative fuel, derived from a eighty-five percent ethanol and fifteen percent gasoline blend, referred to as E85. [42]

Many ethanol supporters marked May 19, 2006, as a momentum day for their cause. On that day key members of Congress sat down with domestic automakers representing Ford, GM, and Chrysler to discuss E85 use and its benefits.[43] Hence, shining the spotlight on ethanol use as a fuel additive and as E85, which could replaces conventional gasoline altogether. Despite recent attention, using ethanol, also known as grain alcohol, as a fuel is not new. The 1908 Ford Model T could be powered by

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[40] *Id.*
[41] President George W. Bush, President Discusses Energy Policy (April 2006) available at http://whitehouse.gov/news/releases/2006/04/2006425.html
[42] Dep't of Energy, *GM Says, "Live Green, Go Yellow"* (Feb. 8, 2006), http:// www.eere.energy.gov/afdc/progs/ddown.cgi?afdc/WHATS_NEW/557/1/10
[43] FOXnews.com, *Big Three Automakers Meet with Lawmakers on Capitol Hill* (May 18, 2006), http://www.foxnews.com/story/0,2933,194464,00.html

ethanol.[44] But, as plentiful cheap gasoline became available interest in ethanol faded. Now with the passing of legislation such as the Energy Policy Act (EPAct) of 2005, ethanol viability has once again been pushed to the forefront.

Section 1501 of the EPAct of 2005, entitled "Ethanol and Motor Fuels" defines renewable fuel as motor vehicle fuel that:

> Is produced from grain, starch, oilseeds, vegetable, animal, or fish materials including fats, greases, and oils, sugarcane, sugar beets, sugar components, tobacco, potatoes, or other biomass; or
>
> Is natural gas produced from a biogas source, including a landfill, sewage waste treatment plant, feedlot, or other place where decaying organic material is found; and
>
> Is used to replace or reduce the quantity of fossil fuel present in a fuel mixture used to operate a motor vehicle.[45]

The act defines "cellulosic biomass ethanol" as being derived from any lignocellulosic matter that is available on a renewable or recurring basic, to include: dedicated energy crops and trees, wood residues, plants and grasses and agricultural residues and animal waste and other waste materials.[46] The act highlights a long list of potential sources capable of producing ethanol. Presently, this high-octane liquid fuel produced by the fermentation of plant sugar, is typically produced from corn in the United States.[47]

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[44] MSNBC.com, *Moonshine Returns as Ethanol Gas Additive* (May 15, 2006), http://www.msnbc.com/id/1280125/

[45] Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat 594, sec. 1501 § 211 (o)(1)(C)(i)(I)-(II)

[46] *Id.* at sec. 1501 § 211 (o)(1)(A).

[47] National Ethanol Vehicle Coalition, *What is Ethanol?*, http://www.e85fuel.com/e85101/faqs/ethanol.php

The EPAct of 2005 requires the Environmental Protection Agency (EPA) to ensure that gasoline sold or introduced into U.S. commerce contains a set volume of renewable fuel starting in 2006. The act calls for 4.0 billion gal/year by 2006 up to 7.5 billion gal/yr by 2012.[48] This would represent the replacement of just over four percent of petroleum in gasoline by 2012.[49]

While the EPAct of 2005 requires replacing a small amount of petroleum with ethanol, organizations such as the National Ethanol Vehicle Coalition (NEVC) champion the expanded use of E85 to replace conventional gas.[50] A number of other private and quasi-governmental organizations promote the use of E85 to include, American Coalition for Ethanol (ACE) [51]and the Governor's Ethanol Coalition (GEC).[52] Each group, echoes the benefits listed below by the DOE as reasons for increased ethanol use in the current gasoline product and moreover for E85 replacement. They couch such benefits as a win for everyone.[53]

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[48] Energy Policy Act of 2005, *supra* note 45, sec. 1501 § 211 (o)(2)(B)(i)

[49] "The mandated target of producing 7.5 billion gallons of ethanol (fuel) by 2012 translates into roughly 490,000 b/d, representing approximately three percent of projected domestic transportation fuel needs in 2012 and less than five percent of total gasoline demand." *See.* Frank Verrastro, Director And Senior Fellow, Energy Program, Center For Strategic And International Studies, Testimony before the Committee on Energy and Natural Resources, United States Senate, Comments and Observations on the Topic of U.S. Energy Independence (March 7, 2006) *available at* http://energy.senate.gov/public/index.cfm?FuseAction =Hearings.Testimony&Hearing_ID=1534&Witness_ID=4344

[50] The NEVC declares it is the "nation's primary advocate for expended use of …E85 motor fuel." *See.* National Ethanol Vehicle Coalition, *Mission Statement*, http://www.e85fuel.com/mission.php

[51] *Infra* note 172.

[52] GEC membership includes governors from 32 States. The coalition is devoted to the promotion and increased use of ethanol. *See.* Governor's Ethanol Coalition, The Coalition's History, http://www.ethanol-gec.org/aboutus/histry.htm

[53] *But See.* Rob Kundert, *E85 May Provide Future Development Opportunities*, Land Development Today (Aug. 8, 2005), http://www.landdevelopmenttoday.com/article337.htm ("'Of course farmers and renewable fuels processors will benefit from more demand for [ethanol] products…' said Bernie Punt, [Iowa Renewable Fuel Association] president.")

IV. Reasons For And Against The Preferred E85 Blend

DOE list the following benefits derived from E85 use: 1) E85 is easy to use and handle.[54] This factor is one of E85 clearest advantage over other alternative fuels. According to DOE, E85 fueling equipment is only slightly different from that of conventional gasoline.[55] In addition, equipment costs are roughly the same when in comparison with current gasoline storage and dispensing systems.[56] Finally, E85 can be dispensed using the same method used to delivery conventional gasoline to consumer, via self-serve pumps. The same cannot be said for other alternative fuels such as hydrogen (a favorite fuel among some environmentalists). Current technology continues to struggles with creating a safe means to store sufficient quantities of hydrogen in vehicles, as well as a safe method to refuel such vehicles.

2) The availability and affordability of vehicles capable of running on E85.[57] In this area E85 holds a distinct advantage over other alternative fuels. There are currently five million vehicles in the U.S. with the capability to use E85.[58] GM alone is scheduled to manufacture 400,000 flexible-fuel vehicles (FFV) in 2006 that are capable of burning either gasoline or an ethanol/gasoline blend.[59] That's nearly fifty percent more than the company produced last year.[60] Ford has increased its FFV production by about fifteen

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[54] Dep't Of Energy, Energy Efficiency and Renewable Energy, *Benefits of E85,* http://www.eere.energy.gov/afdc/e85toolkit/eth_benefits.html, (Last Update on Dec. 15, 2005)

[55] *Id.*

[56] *But See.* American Petroleum Institute, *Flexible Fuel Vehicles and E85*, (Mar. 23, 2006) *available at* http://api-ec.api.org/filelibrary/ffvs-e85-Condensed-Summary.pdf (Adding a new E85 UST system with dispenser could cost as much as $240,000)

[57] Dep't Of Energy, *supra* note 54.

[58] Gary A. Herwick, *supra* note 24.

[59] Amanda Little, *Corn at the Right Time* (Feb. 24, 2006), http://www.grist.org/news/muck/2006/02/24/griscom-little/

[60] *Id.*

percent in 2006.[61] Tom LaSorda, the automaker's president and CEO, stated at Renewable Fuels Summit in April 2006, "that the company has put 1.5 million FFVs on the road since 1998" and it "plans to sell 250,000 in 2007, doubling that number in 2008."[62] Furthermore to automakers, "the cost to make the engine ethanol-friendly is just a couple hundred dollars per vehicle." [63]

Critics point out the real motive behind domestic automakers push for FFVs is the "hefty CAFE (Corporate Average Fuel Economy) boost they get in return."[64] Under the Alternative Motor Fuel Act of 1988, FFVs receive credit as to the CAFÉ program as alternative fuel vehicles, even if the vehicle never actually runs on E85.[65] Critics state, the credits, in essence, increases overall fuel economy of an automaker's fleet by "as much as 1.2 miles per gallon."[66] Thus, automakers that generate enough FFV passenger vehicles each year only have to meet a CAFÉ standard of 26.3 mpg, instead of the 27.5 mpg for passenger car. [67] If E85 is never used in these vehicle it would result in less fuel-efficient vehicle in the market.

3) E85 reduces the overall use of petroleum replacing it with a renewable based fuel produced domestically. [68] In 2003, the ethanol industry grew to seventy-four plants in nineteen states. [69] By June 2006, 101 refineries were on line with another thirty plants

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[61] *Id.*
[62] *Id.*
[63] BusinessWeek online, *Fill 'Er Up -- But With What?*, (May 22, 2006), http://www.businessweek.com/magazine/content/06_21/b3985084.htm?campaign_id=rss_innovate
[64] *Id.*
[65] Alternative Motor Fuels Act of 1988, Pub. L. 100-494, sec. 6 (1988), *See also.* Automotive Fuel Economy Manufacturing Incentives for Alternative Fueled Vehicles, 49 Fed. Reg. 538.2 –9 (Oct. 1, 2004)
[66] Amanda Little, *supra* note 59.
[67] *Id.*
[68] Dep't Of Energy, *supra* note 54.
[69] Dep't Of Energy, Energy Efficiency and Renewable Energy, *Biomass Program,* http://www1.eere.energy.gov/biomass/economic_growth.html (Last Update on Mar. 14, 2006)

under construction with a combined 6.8 billion-gal/year capacity.[70] While the ethanol production industry grows at a substantial pace, the amount of petroleum currently being replaced by ethanol remains at best minimal.[71]

Critics attribute the dramatic increase in ethanol production plants to substantial federal subsidies. They assert nearly every aspect of ethanol production benefits from federal subsidies, starting with the corn feed. The average corn subsidies from 1995 to 2004 equals forty-three cents a bushel. This reduced-priced corn is then produced into ethanol. An increasing number of ethanol production plants are farmer owned co-ops. A vast majority of these co-ops qualify for a small-producers credit of ten cents a gallon.[72] Federal tax law allows the credit to pass through the co-op, which enable co-op owners to apply the tax credit to their individual tax returns. This creates a tremendous tax benefit for co-op owners. Enacted in 2004, the Volumetric Ethanol Excise Tax Credit (VEETC) generated a fifty-one cents tax credit for ethanol marketers and blenders.[73] Ethanol detractors proclaim the total federal ethanol subsidies cost the American taxpayers sixty-one cents per gallon.[74]

Ethanol proponents contend that federal subsidies are necessary in order for the ethanol industry to grow and potential compete with the petroleum industry. Ethanol

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[70] RFA Press Release, *Minnesota Continues Expansion Of Ethanol Industry*, (June 14, 2006) http://www.ethanolrfa.org/media/press/rfa/view.php?id=738

[71] Patrick Bedard, Tech Stuff: Ethanol Promises, Car and Driver.com, at 2 (Jul. 2006), http://www.caranddriver.com/features/11174/tech-stuff-ethanol-promises-page2.html

[72] Energy Policy Act of 2005, *supra* note 45, sec. 1347 (EPAct of 2005 allows facilities that produce up to sixty million gallons of ethanol in an annual capacity to take advantage of the small producer credit of ten cents per gallon) *See also*. American Coalition For Ethanol (ACE) Summary Of Ethanol-Related Provisions In H.R. 6, The Energy Security Act Of 2005, at 6, (Aug. 2005), http://www.ethanol.org/documents/ACERFSSummary.pdf (According to ACE, "virtually every new ethanol plant under construction will eventually qualify for the tax credit under this change and over 30 ethanol facilities in operation will now become eligible for the tax credit as a result of the new definition.")

[73] The American Jobs Creation Act of 2004, Pub. L. No. 108-357.

[74] Tad Patzek, *The Real Corn-Ethanol Transportation System* (April 2006), *available at* www.oilcrisis.com/ethanol/TrueCostofEtOH.pdf (This article explains in greater detail the federal tax subsidies for ethanol)

supporters argue that big oil has enjoyed substantial federal subsidies for decades. They cite to a 1989 study by the General Accounting Office (GAO) that shows the oil industry received approximately $150 billion in tax incentives, since 1968.[75] By contrast, the ethanol industry had received $11.2 billion through a partial exemption of the federal excise tax and $200 million in income tax credits.[76] Some critics include the cost of waging war to protect the world oil lands, as an additional hidden cost. Thus, if such hidden costs were reflected in the wholesale and retail prices, instead of being subsidized by the general taxpayer, oil and gasoline would be far more expensive than they are today.[77] When factoring in the hidden cost of war, some oil industry critics estimate the real cost of gasoline at upwards of ten dollars per gallon.[78] These hidden costs have the effect of providing oil and gasoline with a competitive market advantage over other alternative energy schemes.[79]

4) Finally, the DOE declares that E85 is good for the environment.[80] DOE assertion is based on its comparison between E85 and conventional gasoline, using EPA Air Pollution score and the Greenhouse Gas (GHG) emission rate.[81] The EPA Air Pollution score rates cars and light trucks based on how much smog forming air pollution they emit.[82] The Air Pollution Score measures pollutants that contribute to health problems and smog. The score is from zero to ten, where ten representing the best. The

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[75] National Corn Growers Association, Ethanol & Public Policy, http://www.ncga.com/ethanol/main/provisions.htm#subsidies (Last Updated Jun. 2005)

[76] *Id.*

[77] Wikipendia, Oil price increases of 2004-2006 (Aug 2006), http://en.wikipedia.org/wiki/Oil_price_increases_of_2004_and_2005

[78] EVWorld, Real Cost of Oil Equates to $10 Gallon Gasoline (Apr 2006), http://www.evworld.com/view.cfm?section=communique&newsid=11520&url=

[79] *Id.*

[80] Dep't of Energy, *supra* note 54.

[81] www.fueleconomy.gov, http://www.fueleconomy.gov/feg/byfueltype.htm (Last viewed July 26 2006)

[82] *Id.* (double click on the blue question mark below the underlined heading "EPA Air Pollution Score" at the top of the page)

score measures emission rates from the following air pollutants NOx, NMOG, CO, PM and HCHO.[83]

GHG emission rate is based on full-fuel cycle estimate, which focus on three major GHGs emitted by motor vehicles, namely carbon dioxide, nitrous oxide, and methane.[84] Full cycle estimates consider all steps in the use of a fuel, from production and refining to distribution and final use.[85] For instance, the 2007 GMC Yukon 2WD using standard eighty-seven octane gasoline emits 10.3 tons/year of GHG and receives an EPA Air Pollution Score of three.[86] Compare with, a GMC Yukon 2WD fueled with E85 which emits nearly two tons/year less GHG and achieves an EPA Score of seven.[87] Ethanol advocates assert corn-based E85 fuel accomplishes between eighteen and twenty-nine percent reduction of GHG emissions per gallon, while cellulosic-based E85 can achieve up to eighty-six percent reduction per gallon.[88] Critics voice the most opposition as to this factor. Ethanol opponents argue that ethanol yields only twelve percent less GHGs than gasoline.[89] Moreover, they state ethanol has environmental drawbacks including significantly greater releases of nitrogen, phosphorous and pesticides into waterways through runoff from cornfields. [90] In addition, critics assert that ethanol,

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[83] *Id.*
[84] *Id.* (double click on the blue question mark below the underlined heading "Greenhouse Gas Emissions" at the top of the page)
[85] *Id.*
[86] *Id.*
[87] www.fueleconomy.gov, *supra* note 81.
[88] Michael Wang, Center for Transportation Research Energy Systems Division, Argonne National Laboratory, Presentation before NGCA Renewable Fuels Forum (Aug. 23, 2005)
[89] H. Josef Hebert, *Study: Ethanol won't solve energy problems,* ENN (July 11, 2006), http://www.enn.com/today.html?id=10839
[90] *Id.*

particularly in greater concentrations in gasoline, generate more "smog-causing pollutants than gasoline per unit of energy burned." [91]

Despite its shortcoming many still sing ethanol's praise. While many voice their support for ethanol and in particular the E85 blend. There are a number of limiting factors, which must be overcome in order for ethanol to be deemed a viable alternative to conventional gasoline. Most notably, ethanol lacks a feasible infrastructure to support wholesale conversion. Moreover, corn derived ethanol will not be enough to replace the estimated 140 billion gallons of gasoline the U.S. uses each year.[92]

In 2005, U.S. produced 11.1 billion bushels of corn.[93] Each bushel of corn produces 2.6-2.8 gallons of ethanol.[94] If 100% of corn produced was used at the 2.8 production rate that would total only 31.08 billion gallons of ethanol. Far short of 119 billion gallons needed to convert the nation to E85.[95]

However, corn is not the only sources of ethanol. As previously mentioned, ethanol can be derived from biomass but requires a different production method than is currently used by corn produced ethanol. EPAct of 2005 presents examples of "cellulose biomass ethanol" (i.e. agriculture wastes, dedicated energy crops, municipal solid waste (MSW) and forestry and mill wastes.) However, manufacturing ethanol from biomass

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[91] *Id.*

[92] In 2005, U.S. ethanol industry produced four billion gallons of ethanol. "That's only enough to replace three percent of the 140 billion gallons of gasoline the USA burned last year." *See.* James R. Healey, *Is Ethanol the Answer?*, USA TODAY.com (Feb 1, 2006), http://www.usatoday.com/tech/science/2006-02-01-ethanol_x.htm

[93] Economic Research Service, USDA, Feed Yearbook-Summary (April 2006), http://usda.mannlib.cornell.edu/reports/erssor/field/fds-bby/fds2006s.txt

[94] Gary A. Herwick, *supra* note 24.

[95] James R. Healey, *supra* note 92.

requires special enzymes.[96] These enzymes differ from the simple enzymes used to break down starches to simple sugars used in corn and sugarcane and cost substantially more to generate.[97] Each aforementioned biomass substance yields various projected amounts of ethanol. One study conducted by General Motors (GM) shows that agricultural residues (i.e. corn stover, wheat straw, soybean residue, and barley) could generate twenty to twenty-five billion gallons per year (gal/yr).[98] Energy crops (i.e. switch grass) can yield thirty-three billion gal/yr. MSW (i.e. lawn clippings) could generate 5.8- 10.4 billion gal/yr.[99] Finally, forestry and mill wastes can generate 450 -980 million gal/yr.[100] The GM presentation states that ethanol from biomass could yield between 66.5 to 107 billion gal/yr.[101] This yield still would not create sufficient ethanol quantities to replace conventional gasoline with E85, but it could result in the creation of a substantially higher ethanol blend (such as E50 or E60). Even if ethanol production could reach this yield, the vast majority of current U.S. automobile are not design to run on ethanol mixture greater than ten to fifteen percent. Thus leading to the next problem, lack of vehicle capable of operating on higher ethanol concentrated blends.

Although most vehicles on the road today can operate on an E10 blend, there are a limited number of flex-fuel vehicles (FFV), which are currently capable of operating on E85.[102] And while, the five million E85 capable FFVs represent the largest number of

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[96] Green Car Congress, *Novozymes and NREL Reduce Cost of Enzymes for Biomass to Ethanol Production 30 Fold*, (Nov 2005), http://www.greencarcongress.com/2005/04/novozymes_and_n.html
[97] Gary A. Herwick, *supra* note 24.
[98] *Id.*
[99] *Id.*
[100] *Id.*
[101] *Id.*
[102] Dep't Of Energy, Energy Efficiency and Renewable Energy, *Ethanol Market*, http://www.eere.energy.gov/afdc/altfuel/eth_market.html, (Last Updated Feb. 8, 2006)

alternative fuel capable vehicles on the U.S. roads, this number is minuet when compare to the estimated 226 million vehicles in use in this nation.[103]

On average E85 is cheaper than conventional gasoline on a per gallon basis. However, E85 contains less energy, (i.e. lower British Thermal Units (BTUs)) than regular unleaded gasoline. As an illustration, the aforementioned 2007 GMC Yukon 2WD achieves sixteen miles per gallon (mpg) (city), twenty-one mpg (highway) at an annual fuel cost of $2,402 when fueled with convention eighty-seven octane gas.[104] In comparison, the same 2007 GMC Yukon 2WD powered by E85 achieves twelve mpg (city), sixteen mpg (highway) at an annual cost of $2,780. [105] Thus, to be advantageous for a consumer, someindustry experts state that E85 must be priced forty to fifty cents per gallon less because of lower fuel mileage rate.

Even with federal subsidies, achieving this pricing goal can prove difficult for a number of reasons. First, lies with the problem regarding the E85 distribution process. Currently, after crude oil is refined into gasoline and other petroleum products, the majority of gasoline is shipped first by pipeline to storage terminals near consuming areas, and then loaded into trucks for delivery to individual gas stations.[106]

However, blending ethanol with gasoline at the refinery stage and then pumping it through existing pipelines cannot occur because the ethanol would corrode the pipeline.[107] Pipelines are controlled and maintained by big oil companies. Thus, it must be transported via trucks, trains and barges in relatively small batches to storage terminals

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[103] Dep't of Energy, Energy Efficiency and Renewable Energy, Transportation Energy Data Book (May 2006), *available at* http://cta.ornl.gov/data/tedb25/Edition25_Chapter03.pdf
[104] www.fueleconomy.gov, *supra* note 81.
[105] *Id.* (The annual cost assumes that E85 is roughly forty-seven cents cheaper than regular unleaded gasoline.)
[106]Energy Information Administration, *supra* note 13.
[107]Larry E. Hall, *Cornfields vs. Oil Fields*, Auto MSNBC.com, http://autos.msn.com/advice /article.aspx?contentid=4024000

where it's blended with gas.[108] This process and the transportation cost associated with it accounts for some of the reason that a E85 public station in Virginia (Arlington) sold E85 and regular unleaded for the identical price of $3.25 per gallon in late April 2006.[109] By comparison, a Marathon station in Urbana, Illinois—close to cornfields and ethanol production plants—priced E85 at $2.49 a gallon, 45 cents less than regular unleaded.[110]

The second key reason hinges on the tremendous demand for a finite supply of existing ethanol in 2006. After Hurricane Katrina struck in 2005, the price at the pump increased and for a time the price of E85 was sometimes higher than regular unleaded at many refueling locations.[111] According to industry analysis, one of the main reasons for the high prices centered on ethanol demands having been at an all time high. [112] Proponent for ethanol use cite the phase out of MTBE[113] in parts of the United States as driving reason for this unprecedented demand for ethanol.

By 2004, 17 states either banned or greatly restricted the use of MTBE.[114] Currently 20 states ban MTBE use.[115] Each state cites MTBE's link to water pollution as the reason for the ban. According to EIA, in 2005, a number of petroleum companies announced their intent to remove MTBE from their gasoline in 2006. Therefore, in 2006,

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[108] Energy Information Administration, *supra* note 13.
[109] Larry E. Hall, *supra* note 107.
[110] *Id.*
[111] Illinois Environmental Protection Agency, Illinois Green Sheets-*E85 Remains the Answer*, http://www.illinoisgreenfleets.org/features/e85-pricing.html
[112] *Id.*
[113] *Id.* (Methyl tertiary-butyl ether) is a chemical compound that is manufactured by the chemical reaction of methanol and isobutylene. MTBE is almost exclusively used as a fuel additive in motor gasoline. It is one of a group of chemicals commonly known as "oxygenates" because they raise the oxygen content of gasoline. *See also.* U.S. Environmental Protection Agency, Gasoline, http://www.epa.gov/mtbe/gas.htm (Last Updated Mar. 7 2006).
[114] Fred Sissine, *CRS Issue Brief for Congress-Renewable Energy: Tax Credit, Budget, and Electricity Production Issues*, at 5 (January 28, 2005) *available at* http://ncseonline.org/NLE/CRSreports/05Jan/IB10041.pdf
[115] Timothy Wheeler, *Refiners to Phase Out Use of MTBE*, Baltimoresun.com, (Feb 17, 2006), http://www.baltimoresun.com/news/local/harford/bal-md.mtbe17feb17001554,0,5399305.story?coll=bal-local-harford

301 million gallons per month of ethanol were used compared to 80 million gallons per month of MTBE.

Moreover, nature played a role in driving demand. The hurricanes that hit the Gulf Coast in late 2005 created a gasoline shortage throughout the country and in some cases, refinery supplies were slow to recover. Major gasoline retailers found it necessary to extend their fuel supplies, by adding a small amount of ethanol to their gasoline blend as a short-term solution.[116]

According to Rick Tolman, CEO of the National Corn Growers Association, during the months after Katrina, "The price [of E85] is higher but it is being driven by market forces due to a short term market shortage."[117] He goes on to state "E85 has been and will be priced competitively according to market forces." [118] Thus, the more ethanol dedicated to create E10 and lesser ethanol concentrated blends, the less ethanol available to produce E85 blend. While ethanol supporters focus on events such as Hurricane Katrina, other weather events such as prolong drought could be devastating to corn production and thus ethanol production. Such events would also drive up prices for a limited supply of domestic ethanol.

The EPAct of 1992 required the majority of eligible federal fleet vehicles be AFV. Furthermore, the 2000 executive order required federal agencies use alternative fuels to meet at least fifty-one percent of the fuel needs of those AFVs by 2005.[119] With the passing of the EPAct of 2005, this mandated increased to a 100% requirement, with

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[116] Illinois Environmental Protection Agency, *supra* note 111.
[117] *Id.*
[118] *Id.*
[119] *See.* Energy Policy Act of 1992, *supra* note 35, sec. 303 (EPAct required by 1999, seventy-five percent of a Federal fleet's covered vehicle acquisitions must be AFVs) *See also. Greening the Government through Federal Fleet and Transportation Efficiency*, E.O. 13149, 65 FR 24607, Pt 2 §202(a) (2000) (Agencies shall use alternative fuels to meet a majority of the fuel requirements of those motor vehicles by the end of FY 2005)

only limited exceptions to this provision.[120] This provision required nearly 72,000 vehicles to now run on E85 putting an additional strain on the ethanol supply.[121]

The lack of refueling locations, the limited number of vehicles, along with the five to twelve percent mileage reduction compare to standard gasoline, and limited ethanol production capacity are among the chief reasons opponents of E85 remain skeptical of E85's usefulness. Furthermore, some in the scientific community question whether the use of E85 is environmentally beneficial. A number of scientists, lead by David Pimentel, a professor of agricultural sciences and insect ecology at Cornell University, argue that the fossil-fuel inputs required to grow corn exceeds the amount of energy created by the resulting ethanol, a concept referred to a "negative energy balance."[122]

However, ethanol use is not without its supporters in the scientific community. A peer-reviewed paper commissioned by Natural Resource Defense Council, an environmental non-profit organization, and published in *Environmental Science and Technology* (ES&T), asserts ethanol yields fossil-fuel savings.[123] *ES&T* analysis shows that ethanol's energy output is greater than the inputs required to make it.[124]

Roel Hammerschlag, president of the Institute for Lifecycle Environmental Assessment and author of the ES&T paper states "by first normalizing and then comparing the data used in 10 of the most prominent studies," he reaches a different

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[120] Energy Policy Act of 2005, *supra* note 45, sec. 701.
[121] Energy Information Administration, Alternative Fueled Vehicles in Use (Oct. 2005) ,http://www.eia.doe.gov/cneaf/alternate/page/atftables/atf21-35_04.html
[122] Amanda Little, *supra* note 59.
[123] ES&T OnlineNews, *How Green is Ethanol as a Renewable Fuel?* (Feb. 8, 2006), http://pubs.acs.org/subscribe/journals/esthag-w/2006/feb/policy/kc_ethanol.html
[124] *Id.*

conclusion than Prof. Pimentel.[125] He asserts "producing and burning ethanol are better for the environment than producing and burning gasoline." [126] However, the study indicates that not all ethanol is the same.

According to the study, fuel produced from corn using the more traditional approach may generate only minor renewable energy returns.[127] While, the ethanol obtained from cellulose with a developing technology that uses fibrous materials such as wood chips, switchgrass, or farm residues, as opposed to corn kernels, has a clear advantage over gasoline.[128]

V. Bringing Ethanol To A Location Near You

Even as the scientific community continues to grapple with the question of whether ethanol is an effective and efficient renewable fuel source,[129] a number of lawmakers at the federal and state level have joined the ethanol bandwagon. They proposed legislation aimed at combating the aforementioned shortcoming ethanol and the preferred blend of E85 face.

Most proposed and enacted ethanol related legislation, particularly at the federal level, is incentive-based and is directed at stimulating growth by means of tax credits and/or grants. However, recent legislation, such as the Renewable Fuel Standard (RFS) provision found in EPAct of 2005, highlight an emerging command and control approach to ethanol use at a national level.

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[125] *Id.*
[126] *Id.*
[127] *Id.*
[128] *Id.*
[129] *See.* David Morris, *The Energetics of Ethanol: An Introduction and Link to Studies,* http://www.newrules.org/agri/netenergy.html (Last Updated Jun. 2006). (Over the years more than twenty scientific studies have examined the question. This document contains links to the major studies of the subject completed during the last decade.)

A. The Federal Plan

In his proposed 2007 budget, President Bush included $150 million "to help develop the required advanced technologies needed to perfect the process to make fuel ethanol from cellulosic (plant fiber) biomass, which is now discarded as waste."[130] The President proclaims this is a "fifty-nine million dollar increase over FY06."[131] The Administration reports research scientists indicate "accelerating research into 'cellulosic ethanol' can make it cost-competitive by 2012...offering the potential to displace up to thirty percent of the Nation's current fuel use."[132] Whilst critics question President Bush's motives, particularly in light of his close ties with big oil, the President's recent political stance provides a welcome backdrop for ethanol supporters in the 109th U.S. Congress. Such congressional supporters have proposed a number of legislative measures aimed at addressing numerous issues facing ethanol usage and production. Discussed below are some of the more noteworthy measures proposed during the 109th Congress sessions.

In April 2005, Sen. Barak Obama (D-Ill) introduced Senate Bill 918 (S. 918), entitled "E-85 Fuel Utilization and Infrastructure Development Incentives Act of 2005."[133] The bill proposed the following:

1) A tax credit of up to fifty percent of the cost for installing alternative fuel equipment to store and or dispense E85 fuel. This incentive was capped at $30,000 subject to a phaseout date of 2010 [134]

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[130] Press Release, State of the Union: The Advance Energy Initative (Jan. 2006), *available at* http://www.whitehouse.gov/news/releases/2006/01/20060131-6.html
[131] *Id.*
[132] *Id.*
[133] S.B. 918, 109th Cong. (1st Sess. 2005).
[134] *Id.* sec. 30B.

2) A thirty-five cent alternative fuel retail sales credit for each gallon of alternative fuel sold by the taxpayer at retail. [135]

On June 24, 2005, Rep Julia Carson, introduced House Bill 3059 (HR 3059), entitled "Alternative Fuel Utilization and Infrastructure Development Incentives Act of 2005." [136] HR 3059 was nearly identical to S.918, calling for amendment to tax code allowing for a fifty percent credit for installation of an E-85 fuel station and a tax credit of thirty-five cents per gallon of E-85 fuel.[137]

Even though, both bills failed to be enacted in their proposed forms, section 1342, of the EPAct of 2005, partially enacted the tax credit for building renewable fuel stations proposed in S.918 and HR 3059.[138] Said section allowed for a thirty percent tax credit in place of the fifty percent sought. However, the breath of the tax credit now enabled gas station retailers to installed not only E85 pumps, as S.918 and HR 3059 advocated, but also, "natural gas, compressed natural gas, liquefied natural gas, liquefied petroleum gas, or hydrogen along with any mixture of biodiesel" dispensers. While Section 1342 reports to be more expansive, the provision is viewed as a victory for E85 proponent. For, current E85 fueled FFV dominates the alterative fuel vehicle market. Therefore, service stations likely to use this provision are predicted to install E85 pumps.

The fight to increase the number of alternative fuel gas stations continues with the introduction of Senate Bill 2614 (S. 2614), entitled "Alternative Energy Refueling System Act of 2006." [139] On April 7, 2006, Sen. John Thune, (R- SD), introduced the bill

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[135] *Id.* sec. 40B.
[136] H.R. 3059, 109th Cong. (1st Sess. 2005).
[137] *Id.* secs. 30B, 40B.
[138] Energy Policy Act of 2005, *supra* note 45, sec. 1345.
[139] S.B. 2614, 109th Cong. (2d Sess. 2006), *see also*. H.R. 5346, 109th Cong. (2d Sess. 2006) (Introduced by Rep. Moran (D-KS), this measure is substantively identical to S.B. 2614)

to amend the Solid Waste Disposal Act to require EPA to create a program to allow eligible persons (i.e. refueling vendors, owners or facility operators of alternative fuel refueling systems) reimbursement from the Leaking Underground Storage Tank Trust Fund (LUST) for purchasing and installing one or more alternative energy refueling systems.[140]

However, the proposed bill places limits on reimbursements to (1) no more than two systems for each facility owned by an eligible entity; and (2) the lesser of thirty percent of a system's cost or $30,000.[141]

In Sen. Thune's Senate floor speech, he indicates that this act would "provide an incentive for gas station owners across the country to install alternative refueling systems for automobiles." [142] The act is report to "builds upon the existing tax credit that gas station owners can receive for installing alternative energy tanks."

He explains, that currently under the EPAct of 2005, an eligible gas station owner, who installs an alternative refueling system, can receive a tax credit of up to $30,000.[143] According to Sen. Thune, under his proposed act a gas station owner of multiple refueling station could continue to receive the $30,000 tax credit as allowed under EPAct of 2005.[144] However, under his bill "that same station owner could also be reimbursed for thirty percent of the costs--not to exceed $30,000--for up to two additional alternative refueling systems."[145] According to Sen. Thune this act would

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[140] S.B. 2614, sec. 2 § 9003(h)(13)(B)(i).
[141] *Id.* sec. 2 § 9003(h)(13)(B)(iv)(II)-(III).
[142] 152 Cong. Rec. S3387 (daily ed. Apr. 7, 2006) (statement of Sen. Thune), *available at* http://frwebgate.access.gpo.gov/cgi-bin/getpage.cgi?dbname=2006_record&page=S3387&position=all
[143] *Id.* at S3387.
[144] *Id.* at S3387.
[145] *Id.* at S3387.

drastically increase the incentives for gas station owners to install additional alternative fuel systems.[146]

Sen. Thune's bill looks to provide a means of funding. However, Sen. Thune emphasized that the act "does not require any additional taxes."[147] Sen. Thune proposes using the interest earned from the Leaking Underground Storage Tank Trust (LUST) Fund, which he reports has a "$2.6 billion surplus, to reimburse eligible gas station owners who add alternative refueling systems." [148] He notes "the trust would continue to grow from a portion of the Federal gas tax--one-tenth of a cent per gallon--which amounted to roughly $190 million last year. The fund also continues to grow from the interest that is earned on the balance of the fund, which amounted to roughly sixty-seven million dollars in 2005."[149]

According to Sen. Thune, the proposed act "seeks to use a portion of the interest earned annually to reimburse gas station owners for a portion of the costs associated with the installation of new alternative refueling systems."[150] He cites an added benefit that "the installation of alternative refueling systems reduces the overall number of petroleum tanks that can cause leaks." [151] Additionally, Sen. Thune asserts, "this bill ensures that States are not required to use their annual allocation of

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[146] *Id.* at S3388.
[147] *Id.* at S3388.
[148] *Id.* at S3388.
[149] *Id* .at S3388.
[150] *Id.* at S3388.
[151] *Id.* at S3388.

appropriated funding to reimburse gas station owners." [152] Instead, "such reimbursement would come directly from the EPA Administrator." [153]

Sen. Thune states that his bill does not favor any one alternative fuel over another. However, Sen. Thune makes a point, in his speech to highlight that his state (North Dakota), along with his co-sponsor's (Sen. Obama) state of Illinois are leaders in the production of ethanol.[154] Furthermore, he speaks to the gain in popularity ethanol has achieved. [155] In addition, he cites to the increase in FFVs production by automakers and that less than one percent of service station have the ability to offer alternative fuel like E85.[156]

Finally, in his presentation, he fails to tout the accomplishment of any other alternative fuel, with the exception of biodiesel. Leading one to conclude that this measure, which appears to be inclusive in its name, is actually an E85 initiative. This bill remains in the Finance committee awaiting further committee action.[157]

While S.2614 and similar bills focused on expanding the number of station available to dispense E85 (and in theory other alternative fuels), measures such as Sen. Dayton's Senate Bill (S. 2812), "Renewable Fuels Promotion Act", strive to ensure sufficient access to said pumps.[158] Sen. Dayton asserts the bill is needed to combat big oil efforts to stifle its franchisee from installing E85 pumps near standard pumps found

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[152] *Id.* at S3388.
[153] *Id.* at S3388.
[154] *Id.* at S3388.
[155] *Id.* at S3388.
[156] *Id.* at S3388.
[157] Sen. Thune cosponsored the measure with Sen. Obama. Sen. Lisa Murkowski (R-AK) and Sen. Jim Talent (R-MO) have since joined as sponsors.
[158] S.B. 2812, 109th Cong. (2d Sess. 2006)

under the marketed canopy.[159] Sen. Dayton reports, "some oil companies prohibit franchise gas stations from selling renewable fuels from existing pumps, forcing station owners to install new pumps outside the canopy bearing the company name."[160] This action causes the pumps to be inconvenient for the customer to use and/or too expensive for the gas station owner to install. Dayton's measure bill would void the enforcement of this provision from any franchise-related document. And thus make such oil company directives illegal.

Furthermore, the act " amends the EPAct [of 2005] to add Section 304A which requires: "Not later than January 1, 2008, the appropriate federal agency shall install not less than one renewable fuel pump at every federal fleet fueling center in the United States."[161] In a press release on issued on June 21, 2006, Sen. Dayton asserts, "The reason that the federal government doesn't use more alternative fuel is because it isn't available at federal fueling stations—you can't use the fuel if you don't have the pumps. That is why... [the] 'Renewable Fuels Promotion Act' would require every federal fueling station to be equipped with a renewable fuels pump." [162] According to Sen. Dayton "in the world of renewable energy, infrastructure is half the battle."[163] This bill remains in committee awaiting further action.

Whereas the aforementioned bills look to address the limited fueling stations issue, other legislation looked to expand the number of FFV on the road. Proposed

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[159] Press Release, *Dayton Touts Bill to Increase Use of Renewable Fuels to National Biodiesel Board,* (2006), http://dayton.senate.gov/news/details.cfm?id=257578&&
[160] *Id.*
[161] S.B. 2812, *supra* note 158, sec 304A. (The funding source for this provision is written in vague terms. The bill only states in subsection (b), "There are authorized to be appropriated such sums as are necessary to carry out this section.")
[162] Press Release, *supra* note 159.
[163] *Id.*

Senate Bill 2263 (S. 2263) would require that automobiles and light trucks manufactured after model year 2007 be able to "operate on a fuel mixture that is at least eighty-five percent ethanol." [164] The bill mandates, although it calls for 2007 model to function on E85, violation provisions will not be enforceable until 1 Jan 2009. However, the bill in its current form is silent as to what penalty violators will face.

As proposed S.2263, would apply to all automobiles sold in the U.S. This same bill was introduced in 2005 as Senate Bill 583.[165] And just like last years attempt, the current bill has found no co-sponsors and appears destined to remain at the Finance committee level.

The notion behind S. 2614 and S. 2263, is one of heightening demand for E85, by producing more FFVs on the road and services stations equipped to fuel FFVs. The belief is oil refiners and marketers will have more of incentive to invest capital to produce more E85 in order to satisfy the increased consumer demand. However, even if both S.B. 2614 and S.B. 2263 were enacted, the problem of limited capacity and viable distribution avenues remain a pressing problem for ethanol.

While introducing House Bill 4573 (H.R. 4573), "The BioFuel Act of 2005," Rep Jerry Weller [R-Ill] acknowledged, "One problem we face in the advancement of renewable fuels is the sub par infrastructure we currently have in place."[166] Thus, through H.R. 4573, Rep. Weller set out to address the ethanol infrastructure problem. H.R. 4573 begins by mandating an increase in the renewable content of gasoline to

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[164] S.B. 2263, 109th Cong. (2d Sess. 2006).
[165] S.B. 538, 109th Cong. (1st Sess. 2005).
[166] H.R. 4573, 109th Cong. (1st Sess. 2005) See also. 151 Cong. Rec. E2586 (daily ed. Dec. 17, 2005) (statement of Rep. Weller).

that of twenty-five billion gallons by 2025.[167] This measure according to the Congressmen would raise the alternative fuel contain by 12.5%.[168] (Although the bill refers to the term renewable fuel, in the author's speech before Congress, he emphasizes ethanol use throughout).

Months prior to Rep. Weller proposed bill, President Bush enacted The EPAct of 2005. The act requires by August 2006, EPA to establish rules requiring refineries, blenders, distributors, and importers to introduce or sell volumes of ethanol into commerce in accordance with the annual renewable fuels schedule. However, the set RFS ends in 2012, giving way to a standard established by studies conducted by the Federal government. Rep. Weller provision would extend the RFS until 2025. At which time, it would increase the alternative fuel RFS goal to twenty-five billion gallons.

However, one of the cornerstones of the EPAct of 2005 is its credit-trading program for ethanol, which under Rep. Weller proposal appears unchanged. The credit-trading program is reported to allow refiners the flexibility to use ethanol where it makes the most geographic and economic sense.[169] By August 2006, EPA is required to create the trading and issuing credits rules.[170] The program, which is based on a twelve-month cycle, calls for refiners, blenders, distributors, and importers

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[167] H.R. 4573, *supra* note 166, sec. 1.
[168] 151 Cong. Rec. E2586, *supra* note 166.
[169] EPAct of 2005, *supra* note 45, sec. 752 (The credit-trading program is not limited geographical. Thus, the program would allow a Midwest refiner, who generates extra credits to sell these extra credits to a Southern refiner, who may be using less ethanol than required. The act does not contain provisions for banking credits. It is believed that transportation cost will be a driving factor in the decision making process of whether to use ethanol or credits. Thus, transportation costs for shipping ethanol to various regions of the country will likely dictate credit value in said region.)
[170] *But see*, 40 Fed Reg. Pt. 80 (EPA issued a final rule indicating that they would not met the proposed deadline to establishing the credit-trading program)

to meet the overall RFS schedule during the upcoming year, by either using sufficient amounts or purchasing ethanol credits from other regulated entities that generated extra credits.[171]

Rep. Weller asserts, "it is essential that we [Congress] provide tax incentives for the construction and development of ethanol ...plants...the [proposed] legislation achieves this by providing multiple tax incentives for the construction and development of an infrastructure that will be more able to expand past the Midwest."[172]

H.R. 4573 provides a seven-year depreciation schedule for all ethanol refining equipment. Furthermore, Rep Weller reports, "The BioFuels Act reauthorizes the BioEnergy program that was handled in the 2002 Farm Bill at a level of $140 million for the next nine years." [173] Under this act, heavy focus will be given to cellulosic ethanol research. However, H.R. 4573 remains silent regarding the role E85 will play in the proposed RFS scheme. This question has yet to be address in any federal legislation regarding RFSs to include EPAct of 2005. H.R. 4573 remains at the house committee level.

Sen. Grassley proposed Senate Bill 3553 (S. 3553), entitled "10 by 10 Act."[174] This bill requires ten percent of each gallon of motor fuel sold beginning January 1, 2010, contain at least ten percent renewable fuel.[175] Although S. 3553 is less

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[171] However, not all ethanol is weight the same. Under the RFS program, 2.5 credits are generated for each gallon of cellulosic biomass ethanol used, while corn-based ethanol receives 1 credit for each gallon used. See Energy Policy Act of 2005, *supra* note 45, Sec. 1501.
[172] 151 Cong. Rec. E2586, *supra* note 166.
[173] *Id.*
[174] S.B. 3553, 109th Cong. (2d Sess. 2006).
[175] Id. sec. 2.

demanding than H.R. 4573, Sen. Grassley's measure could be accomplished using existing American automobile fleet technology. But just like H.R. 4573, the question regarding E85 place under this bill remains unanswered.

Finally, Senate Bill 2446 (S. 2446) sponsored by Sen. Obama (D-Ill) Sen. Lugar (R-IN) and Sen. Thune (D-SD), aims at, among other things, heightening the role alternative fuels such as ethanol play in defining the nation's security posture.[176] This bill proposes the creation of an executive cabinet position, the "Office of Energy Security." The cabinet member would be charge with the duty of overseeing "all federal energy security programs," including the coordination of efforts of federal agencies to assist the nation in accomplishing full energy independence. [177]

In addition to establishing the position, the bill looks to provide qualified auto manufacturer with a $100 credit for each qualified flexible fuel motor vehicle produced in the United States by the manufacturer during the taxable year.[178] In addition, the proposed act would amend the federal tax code to provide an alternative fuel retail sales credit. The measure allows a qualified retailer to receive thirty-five cents for each gallon of alternative fuel[179] sold at retail by the taxpayer prior to 2009.[180] The thirty-five cents per gallon measures appear to be in addition to the fifty-one cents tax credit in place. This bill remains in committee awaiting hearings.

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[176] S.B. 2446, 109th Cong. (2d Sess. 2006)
[177] *Id.* sec. 2.
[178] The tax credit includes allowance of the credit against the alternative minimum tax. *See supra* note 176, sec. 45N.
[179] Under S. 2446, sec. 40B(c)(1) The term 'alternative fuel' means any fuel at least eighty five percent (or another percentage of not less than seventy percent, as the Secretary may determine, by rule, to provide for requirements relating to cold start, safety, or vehicle functions) of the volume of which consists of ethanol.
[180] At which time the credit amount will be reduce to twenty cents during 2009-2010 and finally to ten cents in 2011. *See Id.*sec. 40B.

1. The Politics of Ethanol at the Federal Level

While alternative fuels, with the exception of ethanol-derived products, struggle to gather support from influential federal politicians, ethanol has amassed powerful advocates in the U.S. House and Senate. Midwestern Senators and House Representatives from states, such as Illinois, Ohio, Iowa and Minnesota occupy key positions in the 109th U.S. Congress.[181] Moreover, the Midwest legislators can be found occupying a significant number of seats on powerful committees such as Senate Finance and Budget committee.[182] While in the House, the Appropriation, Budget and Transportation committees are teaming with Midwestern Representatives who voice strong support for ethanol initiatives.[183]

Collectively, Midwestern Congress members are responsible for the majority of the ethanol and E85 proposed and enacted bills in the 109th Congress sessions, to

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[181] This region can count the Speaker of the House (Rep. J. Dennis Hastert (R-IL)) among its ranks, arguable the most powerful position in the U.S. Congress. Majority Leader, Rep. John Boehner (R-OH) represents a Midwest state. Senate Democratic Whip, Sen. Richard Joseph Durbin (D-IL) hails from the Midwest, noted as the second highest position in the party leadership in the Senate. Each aforementioned Congressmen supported the interests of the American Coalition for Ethanol (ACE) 100% in 2001-2002. ACE is created to promote and expand the development of the ethanol industry. *See* Project Vote Smart, American Coalition for Ethanol, http://www.vote-smart.org/issue_rating_ detail.php?sig_id =002201M. (Reps. Hastert and Durbin interest group rating) *See also*. Project Vote Smart, American Coalition for Ethanol, http://www.vote-smart.org/issue_rating_ detail.php?sig_id=002447M (Sen. Durbin interest group rating.)

[182] Midwestern Senators hold eleven of the twenty seats in Senate Agricultural committee. Senate Finance Committee chair and co-chair of joint conference committee on Taxation, Sen. Chuck Grassley (R-Iowa) is a stern ethanol support. *See.* Press Release, *Grassley Wins Additional Support for Ethanol and Biodiesel*, http://www.senate.gov/~grassley/ releases/2002/p02r4-23b.htm. *See also*, Press Release, *Grassley Takes More Steps To Reduce Dependence On Foreign Oil* (June 21, 2006) http://grassley.senate.gov/ index.cfm?FuseAction=PressReleases.View&PressRelease_id=5106.

[183] Budget Committee Chairman, Rep. Jim Nussle (R-IA), is a Midwest legislator with strong tides to ethanol. *See* Public Statement, *Nussle Votes to Strengthen Our Energy Security and Improve Iowa's Economy*, (May 24, 2006), http://www.house.gov/list/speech/ia01_nussle/energyapprops.html. Chairman Rep. David Hobson (R-OH) and ranking minority member Peter J. Visclosky (D-IN) of House Appropriation Subcommittee on Energy and Water Development are ethanol supporters from the Midwest. *See* Project Vote Smart, *supra* note 181 (ACE interest group rating for named Congressmen). Ranking minority member of the Committee on Transportation and Infrastructure (Rep. James Oberstar (D-MN)) is another strong ethanol supporter. *See* Project Vote Smart, *supra* note 181. (ACE interest group rating)

include EPAct of 2005.[184] Ethanol supporters regard the EPAct of 2005 as a major victory.[185] The act bestowed benefits in the form of tax incentives and subsidies for nearly every aspect of the ethanol industry. Beyond the ethanol RFS, the act provided an estimated one billion dollars in loan guarantees programs for the construction of facilities that convert municipal solid waste and cellulosic biomass into ethanol and other commercial byproducts.[186] It established a series of grant programs to include one plus billion dollars over the next three years for merchant producers of cellulosic ethanol for facility construction. [187] The act offered nearly $125 million over a four-year period for ethanol Research and Development (R&D) grants in RFG areas along with $440 million to fund projects to convert little-used cellulosic biomass feedstock into ethanol.[188]

Ethanol legislation appears to be a unifying cause for midwestern politicians regardless of party affliction. Case in point, the EPAct of 2005. U.S. House voting record appeared extremely partisan, with 124 Democrats voting against the bill compared to 200 Republican voting for it.[189] The same did not ring true when it came to the voting patterns of Midwest representative. Of the ninety-nine Midwest House members,

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[184] Sen. Grassley proclaims "the full Senate in June adopted my bipartisan package of green energy tax incentives as part of the Energy Policy Act of 2005." *See*. Press Release, *Green Energy Gets Green Light*, (June 29th 2005), http://grassley.senate.gov/index.cfm?FuseAction=CapitolGains.Detail&CapitolGain_id=304&Year=2005.

[185] The NCGA proclaimed, "Years of members' hard work were rewarded with [a] tremendous legislative accomplishment—a 7.5 billion gallon renewable fuels standard (RFS) contained within the Energy Policy Act of 2005. *See* http://www.ncga.com/aboutus/annualReport/2005/index.asp

[186] Taxpayer for Common Sense Action, *Oppose the Domenici Ethanol/MTBE Amendment*, (Jun. 15, 2005) http://www.taxpayer.net/TCS/letterstocongress/archive/2005-06-15domeniciethanol.pdf

[187] Energy Policy Act of 2005, *supra* note 45, sec. 1512.

[188] American Coalition For Ethanol (ACE) Summary Of Ethanol-Related Provisions In H.R. 6, The Energy Security Act Of 2005, at 7, (Aug. 2005), http://www.ethanol.org/documents/ACERFSSummary.pdf .

[189] WashingtonPost.com, House Vote 445, http://projects.washingtonpost.com/congress/109/house/1/votes/445/

seventy-eight voted for the act, leaving only twenty casting nay votes.[190] Many Midwestern Democrats broke party tides rallying instead to support the bill and its ethanol initiatives. Party politics, albeit to a lesser degree, played out in the Senate as well. Resulting in nineteen of the twenty-six nay votes being lodged by Democrats.[191] However, all but one Midwestern Democrat voted in favor of the EPAct of 2005.[192]

Sen. Dayton, a noted ethanol supporter in a speech before the Senate, stressed that he would not promote legislation just because it would benefit his state and one industry at the "expense of all American." [193] However, Senator Dayton acknowledged that in the political world it is paramount to please your constituents. Citing his low approval rating as a major factor in his decision not to seek re-election in the fall.[194] Sen. Dayton recognizes another political truth, the need for raising campaign contributions in order to mount a viable election campaign. [195] Midwestern states like Iowa, Illinois, and Sen. Dayton's state of Minnesota are the largest producers of corn and are among the top ethanol and E85 production states in the country.[196] This region also boasts the best ethanol infrastructure and distribution system in the nation. Minnesota alone has 210 service stations equipped with E85

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[190] *Id.* (click on 'by region") (Jan Schakowsky (D-IL) did not vote)

[191] No Midwestern Republican Senator casted any of the remaining 7 nay votes. *See.* WashingtonPost.com, Senate Vote 213, http://projects.washingtonpost.com/congress/109/senate/1/votes/213/

[192] *Id.*

[193] "I am deeply dismayed by accusations made in the Senate that I and other ethanol proponents are trying to foist some huge additional costs on American motorists in order to increase the profits of one company or to create some profits for our midwestern farmers. I am beholden to no company or industry. I certainly support policies that benefit Minnesota farmers, but I would never, ever try to advance their economic interests at the expense of all other Americans." *See.* Sen. Dayton's Public Statement (Jun. 21, 2005), http://www.vote-smart.org/speech_detail.php?speech_id=108892&keyword=renewable+fuel+Standard &phrase=&contain= (In defense of Amendment No. 790 to the EPAct of 2005)

[194] Micheal Khoo, *Dayton won't Seek Re-election as Minnesota U.S. Senator,* Minnesota Public Radio (Feb. 2005), http://news.minnesota.publicradio.org/features/2005/02/09_khoom_dayton/

[195] *Id.*

[196] The top ten corn producing states in 2004 were located in the Midwest. *See.* National Corn Growers Association, The World of Corn 2005, http://www.ncga.com/WorldOfCorn/main/productionData.htm

pump dispensers.[197] Eighty-one percent of all E85 stations in the nation are located in the Midwest.

Over the years, farmers, in particular corn farmers, have formed a power constituency in the Midwest region. Creating organization such as the National Corn Growers Association, American Corn Growers Association and American Coalition for Ethanol with the goal of promoting pro-ethanol measures. Their efforts appear fruitful. According a watchdog organization, all but fifteen of the ninety plus Midwestern U.S. Congress members voting records were in lock step with ACE agenda in 2001-2002.[198] Thus, the quest to please this segment of their constituents, help to explain why Midwestern Congress members continue to advocate for more and more pro-ethanol measures.

In the past, ethanol supporters on the hill locked horns with opposing members, who championed the use of big oils' preferred oxygenate additive MTBE. Powerful MTBE supporters such as former Rep. Tom Delay (R-TX), (former House Majority Leader)[199] effectively halted efforts to promote ethanol use in recent years.[200]

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[197] As of Aug. 9, 2006. *See.* Dep't. of Energy, Alternative Fuel Data Center, Fueling & Infrastructure (Aug. 2006), http://www.eere.energy.gov/afdc/infrastructure/station_counts.html

[198] *See* Project Vote Smart, *supra* note 181 (ACE interest group rating).

[199] In 2006, Tom Delay received $124,590 from the Oil and Gas industry. He ranked among the top 5 Oil and Gas industry recipients. *See* Center for Responsive Politics, *Oil & Gas: Top 20 Recipients*, Opensecrets.org http://www.opensecrets.org/industries/recips.asp?Ind=E01&cycle=2006 (Last updated on May 29, 2006)

[200] Chris Jones, *Get Ready to Crank it Up and Give it the Ethanol*, Reviewjournal.com (Aug 4, 2005), http://www.reviewjournal.com/lvrj_home/2005/Aug-04-Thu-2005/business/2753425.html ("Ethanol's detractors are… high-ranking, and outspoken. They include Majority Leader Rep. Tom DeLay and Rep. Joe Barton, both Texas Republicans, and Sen. Dianne Feinstein [of California]")

However, recently MTBE proponents no longer find themselves fighting for measures to increase MTBE use. [201] Instead, they were pushing for provisions in legislation, such as EPAct of 2005, to limited MTBE producers' liability from ongoing lawsuits. [202] Without MTBE advocates, the floodgate for ethanol use opened. Thus, with the rise of ethanol and the fall of its only real fuel additive competition, the question shifted from whether ethanol or MTBE should be used, to that of where should the nation gets its ethanol? This struggle pits Midwestern Congress members, who advocate for exclusive domestic ethanol supply, against a growing number of Congress members from outside the Midwest, who seek ethanol from beyond our nation's borders. Some Congress members advocate for lifting current tariffs on imported ethanol as a means to bring more ethanol to the U.S. market.

In May 2006, Rep. Jeb Bradley (R-NH) introduced House Bill 5261 (H.R. 5261) entitled, "Ethanol Import Fairness Act." [203] The bill calls for "amends the Harmonized Tariff Schedule of the United States to repeal the permanent tariff and the temporary duty on ethanol."[204] Currently, there is a fifty-four cents tariff on a gallon of imported ethanol. By lifting the tariff, the author believes more ethanol will be made available to the U.S. market.

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[201] The Democratic Party Press, *Energy Bill Disaster -Energy Bill Includes MTBE Waiver Supported by Tom DeLay and Energy Industry* (April 20, 2005), http://www.democrats.org/a/2005/04/energy_bill_dis.php

[202] The original EPAct of 2005 included Section 1502 "Safe Harbor" limiting liability for producers of MTBE. *See* H.R. 6, 109th Cong. § 1502 (as introduced). However, this measure failed to be included in the enacted legislation. *See* H.R. 6, 109th Cong. (2005)

[203] H.R. 5261, 109th Cong. § 2 (2006)

[204] *Id.* § 2(a)

Sen. Charles Schumer's (D-NY) proposed bill (Senate Bill 2778, "Ethanol Fuel Supply Act of 2006") echoes H.R. 5261 effort to relieve tax restrictions placed on foreign ethanol.[205] Both bills are currently at committee level and neither has garnered much support amongst other Congress members. However, in an interview with MSNBC, President Bush promoted "lifting tariffs on imported ethanol as a way of easing tight gasoline supplies and try to bring down pump prices."[206] Thus, providing greater access to ethanol producing nations, such as Brazil. Currently Brazil, one of the world's leading exporters of ethanol, provides duty-free ethanol to the United States under the Caribbean Basin Initiative (CBI).[207] However, in order to qualify for the duty free status, Brazilian's ethanol (which is derived from sugarcane) must be processed through a Caribbean country before it can enter the U.S.[208] Furthermore, the amount of ethanol allowed under this program cannot be more than seven percent of U.S. ethanol production the previous year or sixty million gallons.[209] The aforementioned proposals would relieve nations, such as Brazil from the Caribbean processing requirement and allow Brazil to export ethanol in excess of the seven percent cap. The cap applies only to duty free ethanol. However, if an importer pays the customs duty and tariff then they can import as much as they want.

Lifting the tariff has generated heavy opposition from powerful legislators, such as Sen. Grassley. Sen. Grassley has been quite vocal regarding his displeasure

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[205] S. 2778, 109th Cong. § 2 (c) (2006) (suspend the 2.5 percent duty on imported ethanol)
[206] MSNBC, *Bush Calls for Cut in Ethanol Tariffs* (May 8, 2006), http://www.msnbc.msn.com/id/12646681
[207] Bill Lambrecht, *Brazil a Model of Ethanol Development*, Iowa Farmer Today (Nov. 16, 2005), http://iowafarmertoday.com/articles/2005/11/23/special_section/energy_and_ethanol/15eth.txt
[208] Ben Lieberman, *Lift Tariffs on Foreign Ethanol*, Heritage.org (May 12, 2006), http://www.heritage.org/Research/EnergyandEnvironment/wm1074.cfm
[209] *Id.*

with the notion of lifting the ethanol tariff. He stated in an interview with Fox News, that lifting the tariff would be "a step in the wrong direction." [210] He went on to say "it would send a signal that we're backing away from our own efforts to seek energy independence."[211] Later in a prepared statement Sen. Grassley declared, "we're already dependent on foreign oil. Surely, President Bush doesn't intend for our nation to go down the path of eventually becoming dependent on foreign ethanol also." [212]

Sen. Max Baucus (D-MT), the ranking Democrat on the Finance Committee, shares Sen. Grassley outlook on this issue. He states, "A change in the tax would be a mistake." While in the U.S. House of Representatives, House Speaker Dennis Hastert (R-Ill) also opposes a tax change.[213] Midwestern Senators and Congress members are poised for as Sen. Byron Dorgan (D-ND) put it "a big fight in Congress" if the President tries to move on his own towards lifting the tariff.[214] Evidence of this plan to fight can be found in Rep. Leonard Boswell (D-IA) proposed measure, House Bill 5431 (H.R. 5431). [215] The bill introduced in May 2006 (in a matter of days after the President call for tariff relief) seeks to extend the tariff on ethanol an additional four more years to Jan 2011.

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[210] FoxNews.com, *Bush's Call to Lower Ethanol Tariffs Fuels Dissent* (May 5, 2006), http://www.foxnews.com/story/0,2933,194464,00.html *See* also Press Release, *Grassley Asks President to Back-Off Ethanol Tariff Proposal* (May 12 2006), *available at* http://grassley.senate.gov/index.cfm?FuseAction=PressReleases.View&PressRelease_id=5060

[211] *Id.*

[212] *Id.*

[213] David Ellis, *Oil bounces back, over $72*, CNNMoney.com (May 10, 2006), http://money.cnn.com/2006/05/10/markets/oil_eia/index.htm

[214] FoxNews.com, *supra* note 210.

[215] H.R. 5431, 109th Cong. (2d Sess. 2006).

A number of ethanol organizations have joined in the debate surrounding the issue of lifting the tariff.[216] Critics argue that President Bush's backed proposal to temporarily halt the ethanol tariff would do little to change prices at the pumps and would result in benefiting Brazil and other foreign ethanol producers. [217]

Despite the President's endorsement lifting the tariff through either proposed legislation seems unlikely, for the current political landscape in Congress favors the pro-domestic ethanol position. S. 2778 was sent to the Senate Finance committee. The Finance committee's chair, Sen. Grassley, has publicly voice his disapproval of this measure as noted above. The ranking democrat on the Finance committee is in agreement with Sen. Grassley on this issue. Without support from either of these key committee members the chance of the measure leaving this committee and ever reaching the Senate floor appears remote. As for H.R. 5261, the Speaker of the House is against this measure. Opposition from such a figure may spell doom for this measure as well.

2. The Midwest's State Collective Action

While it is clear the Midwest region has a vested interest in increased ethanol use the same cannot be said for the Northeast or Western regions of the country. This split between regions of the nation based on diverse interest can result in what has been referred to as "state collective action."[218] The concept is defined as " a

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[216] *See* NCGA.com, *NCGA Opposes Efforts to Remove Ethanol Import Tariff* (May 10, 2006), *available at* http://ncga.com/news/notd/2006/may/051006a.asp *See* also American Corn Growers Association, *Administration's Plans to Import Ethanol Too Expensive for Farmers, Taxpayers and Consumers*, (May 11, 2006), http://www.acga.org/News/2006/051106.htm

[217] Donna Borak, *U.S. considers eliminating ethanol tariffs*, United Press International (May 10, 2006), http://www.upi.com/Energy/view.php?StoryID=20060509-050609-6380r

[218] Note, *State Collective Action*, 119 Harv.L.Rev. 1855 (April 2006).

phenomenon by which states with a common interest act in concert to obtain benefits for themselves without regard for national welfare."[219] While the law review note from which this concept derives focused on formal and informal state agreement, such as state compact, the Midwest Congressional legislators push for wider ethanol usage would serve as an example of the "state collective action" premise in a national political forum. Midwest states stand to reap great benefits from a stronger national ethanol use program. Conversely, greater ethanol usage requirement result in a financial determent for the Northeast and Western regions.

Even as Northeast and Western state contribute tax dollars to fund incentive programs, their collective lack of ethanol infrastructure and insufficient corn stock would greatly reduce their chance of using said incentive programs. However, Midwest representative continue to argue that ethanol use is good for the country and not just to their region. They stress the need to break the nation's oil dependency and assert that ethanol is part of the means to do just that.

While the problems of oil dependency is an agreed national issue, Congress is at odd as to the role and extent ethanol will play in addressing the nation's oil addiction. As Congress continues to struggles with if and how to bring ethanol to the U.S. markets, both as an additive blend and the E85 blend, states are moving to the forefront in this effect.

A number of states have proposed pro-ethanol measures. This paper will focus on three states (California, Minnesota and Iowa) latest efforts to illustrate the leading approaches being employed at the state level, beginning with California.

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[219] *Id.* at 1855.

B. The California Approach

California has been recognized as a trailblazer in environment matters throughout U.S. history. In the area of ethanol usage, California remains at the forefront. [220] California was the first state to ban the use of MTBE.[221] The California ban is credited as a major factor behind big oil's switch to ethanol as a viable oxygenate additive. Moreover, California ranks first in gasoline consumption.[222] It consumes 42.5 million gallons/day, [223] while it ranks third in oil refinery capability.[224] In 2003, the California Energy Commission (CEC) reported nearly eighty percent of California's gasoline must contain some type of oxygenate.[225] In January 2003 more than fifty percent of the refiners completed the transition to ethanol. By 2004, all California refiners completed the transition.

In 2005, California's estimated demand for ethanol reached 900 million gal/year.[226] While ethanol demand is high in the state of California, the same cannot be said for its current ethanol production capacity. In 2005, the state produced only 4.3 million gallons per year of ethanol.[227] Even after completion of a new refinery,

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[220] California Energy Commission, Ethanol Market Outlook for California (Nov. 2005), *available at* http://www.energy.ca.gov/2005publications/CEC-600-2005-037/CEC-600-2005-037.PDF
[221] Cal. Exec. Order No. D-5-99, (Mar. 25, 1999).
[222] Energy Information Administration, *Petroleum Profile: California*, http://tonto.eia.doe.gov/oog/info/state/ca.html (Last Updated Dec. 2005)
[223] *Id.*
[224] Energy Information Administration, *Top U.S. Refining States* (Apr. 2006), http://www.eia.doe.gov/neic/rankings/refiningstates.htm
[225] John Urbanchuk, *Consumer Impacts of the Renewable Fuel Standard* (May 2003), LECG, *available at* http://www.ethanol.org/pdfs/consumer_impacts.pdf
[226] In 2005, this accounted for approximately twenty-five percent of all the ethanol produced in the United States *See*. California The Bioenergy Interagency Working Group Recommendations For A Bioenergy Plan For California, Final Report (Apr. 2006), *available at* http://www.energy.ca.gov/2006publications/CEC-600-2006-004/CEC-600-2006-004-D.PDF
[227] Ethanol Market Outlook for California, *supra* note 220, at 4.

which came on-line in late 2005, California's ethanol output is still slated to increase to only twenty-five million gallons per year.[228]

With the passing of the EPAct of 2005, California along with its refiners faced the question what did EPAct of 2005 really mean to the future of California's ethanol usage. In November 2005, in accordance with California Public Resource Code Section 25356(b), the CEC conducted a survey of California refiners. The survey results were used to "assess what impact the EPAct of 2005 would have on the near-term use of ethanol and supply of gasoline in California." [229]

Although EPAct of 2005 no longer requires oxygenates in gasoline in California (with the exception of non-attainment areas for carbon monoxide), the CEC survey concludes "none of the refiners indicated that they would alter their current ethanol blending practices over the near-term as a result of these provisions. In fact, many of the refiners indicated that they would either stay at the current ethanol levels or possibly consider a higher percentage of ethanol content in the future."[230]

California's own state air quality provisions are a key reason why refiners are continuing to use ethanol at the current level. However, the California Air Resource Board's (CARB) Predictive model has cast doubt on whether refiners will increase ethanol use in California. The California regulation enables refiners to use the CARB

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[228] *Id.* at 4.

[229] Twelve of the fourteen California refineries participated in the survey. The participating refineries represented ninety-two percent of California crude oil processing capacity. They report the average daily gasoline production in California contains approximately six percent ethanol by volume. Approximately one third of all California refiners blend a portion of the gasoline production at or above an ethanol concentration of 7.7 percent by volume. *See* Ethanol Market Outlook for California, *supra* note 220, at 3-5.

[230] *Id.* at 10.

Predictive Model to denote fuel formulations to address emissions.[231] In September 2004, the CARB released the results of its permeation study, which indicated "evaporative emissions from vehicles increased with the use of ethanol." [232] CARB commissioned a new study, in which, the CARB is conducting analysis "to quantify the additional air pollution that will need to be offset through revisions to existing air quality regulations."[233]

Furthermore, refiners reported that they are not likely to produce additional quantities of non-oxygenated gasoline over the near term because non-oxygenated gasoline is not fungible with products containing ethanol and would create logistical and storage issues.[234] Many survey respondents states that it will be hard to meet California air quality regulations without oxygenates fuel additive.[235] Thus, retaining the status quo appears to be the short-term position of California refiners when it comes to increasing ethanol content.

Refiners point to three key factors accounting for their hesitation to expand: 1) the likely increase would "exacerbate problems associated with a constrained infrastructure." (i.e. more railcars, trucks and storage tanks would be needed to handle the increased volumes of ethanol);[236] 2) "Product fungibility could result in a logistical problem if refiners generate gasoline intended for blending with differing amounts of ethanol. Under the current distribution process, unfinished gasoline is

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[231] "The Predictive Model is a set of mathematical equations that relate emission rates to the values of the eight regulated gasoline properties and is credited with increasing the flexibility of gasoline blending in California. ARB has initiated a process to update this model to include new automobile emissions testing information." *See* Ethanol Market Outlook for California, *supra* note 220, at 10.
[232] *Id.* at 10.
[233] The final predictive model is projected for public hearing in Oct. 2006.
[234] Ethanol Market Outlook for California, *supra* note 220, at 11.
[235] *Id.* at 11.
[236] *Id.* at 11.

shipped to distribution terminals via pipeline. At which point, gasoline is held in common tanks from various refiners and is fungible; and[237] 3) finally, changes in air quality regulations could make it more difficult to blend ethanol at higher percentages. In particular, refiners estimate that higher oxides of nitrogen (NO_x) emissions associated with increasing ethanol concentrations would have to be offset with lower sulfur levels in gasoline to ensure compliance with state air quality regulations. [238] For some refiners that are already producing gasoline with low sulfur concentrations, increasing the use of ethanol could be more difficult.[239]

As to E85 blend, none of the refiners have an active marketing program in place in California.[240] According to survey respondents, E85 is plagued with similar logistic issues described for increasing ethanol content in gasoline. Refiners express the capital investment to create the changes would be substantial. Besides the cost expenditure, refiner expressed uncertainty as to whether "the ethanol portion of the E85 will be considered part of a company's 'fair share' portion of the federal RFS obligation."[241] Without clear answers refiners are reluctant to pursue an E85 marketing program within the next five years in California.

Refiners' reluctance has not stop California lawmakers from proposing and enacting provisions which are aimed at increasing alternative fuels, such as ethanol, use in the state.

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[237] *Id.* at 11.
[238] *Id.* at 12.
[239] *Id.* at 12.
[240] *Id.* at 12.
[241] *Id.* at 12.

1. Recent Ethanol Legislation in California

On Sep 29, 2005, Governor Schwarzenegger enacted California Assembly Bill 1007 (AB 1007). [242] AB 1007 requires the California Air Resources Board (CARB) to develop by January 1, 2008 a strategy for increasing the use of alternative fuels to reduce air pollution from motor vehicles and reduce the state's dependence on petroleum.[243]

The bill directs the CARB to evaluate alternative fuels and rate them according to their ability to (1) reduce harmful air and water pollutants and (2) reduce oil consumption. The bill required that "all motor vehicle fuel … be measured on the basis of their merits; [and] full lifecycle assessments are necessary to understand the environmental and public health impacts of substituting alternative fuels for petroleum."[244]

The CARB would than develop a plan for promoting those fuels.[245] The plan would set goals for increased alternative fuel use that minimize costs to the state and maximize economic benefits of in-state alternative fuel production. [246]

The alternative fuel plan established by this bill also includes policy recommendations for enhancing California's alternative fuels fueling infrastructure to ensure fuel access to drivers of alternative fuel. [247]

Prior to passage of AB 1007, California State Energy Resources Conservation (SERC) and Development Commission along with CARB produced "Reducing

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[242] Press Release, Office of the Governor (Sep. 29 2005), *available at* http://www.7gen.com/blog/energy/biofuels/new-laws-in-california-support-clean-energy-resources/790 *See.* AB 1007, 2005-2006 Sess., (Cal. 2005)
[243] Assemb. Pavley's AB 1007 talking paper, (Mar. 2005), *available at* http://democrats.assembly.ca.gov/members/a41/pdf/AB1007.pdf
[244] *Id.*
[245] See, AB 1007,sec 1, Art. 6.5 § 43866, 2005-2006 Sess. (Cal 2005).
[246] Assemb. Pavley's AB 1007 talking paper, *supra* note 243.
[247] *Id.*

California's Petroleum Dependence" report for the State Legislation. The report recommended a twenty percent non-petroleum fuel use in the year 2020 and thirty percent in the year 2030.[248]

AB 1007 authors proclaimed enactment of this bill puts California on a path to meet these goals.[249] However, AB 1007 did not promote any one alternative fuel over another. Instead, it served as a vehicle to study the various known alternative fuels and formulate a plan to reach the recommended goal of twenty percent non-petroleum fuel use by 2020 and thirty percent by 2030.

While AB 1007 proponents appears content with the study first approach, a number of bills proposed during the 2005-2006 California Assembly and Senate sessions attempt to promotion specific pro-ethanol measures.

Assemb. Joe Nation (D- 6th District) introduced Assembly Bill 1012 (AB 1012), reference to as "the Foreign Oil Independence Act of 2006."[250] As introduced, Assemb. Nation's measures established the following milestones:

> 1) By January 1, 2011, twenty-five percent of new passenger vehicles and light duty trucks offered for sale in California shall be capable of operating on clean alternative fuels.
>
> 2) By January 1, 2020, all new passenger vehicles and light duty trucks offered for sale in California shall be capable of operating on clean alternative fuels. [251]

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[248] *Id.*
[249] *Id.*
[250] A.B. 1012, 2005-2006. Sess, (Cal. 2006)
[251] *Id.* sec 1, Art 7 § 43874 (b)(1)- (2)

AB 1012's author reports the bill is designed to address the danger of over reliance on a single source of fuel.[252] And while, Assemb. Nation indicates there is "no single or magic bullet that will fix everything."[253] He views his proposed bill as "one critical component of a strategy to reduce dependence on foreign oil, reduce greenhouse gas emissions, improve air quality and preserve Californians' way of life." [254]

Critics voice concern regarding the requirement that all vehicles sold in California be FFV by 2020. They note that although "some vehicle manufacturers currently offer [E85] vehicles for sale because of a lack of fueling infrastructure and the price of E85, those vehicles appear to be rarely operated using ethanol." [255] Bill opponents, such as Western States Petroleum Association (WSPA) [256], openly question whether mandating FFVs will create demand for alternative fuels such as E85. [257] Furthermore, detractors assert the bill's mandate approach to force the sale and supply of alternative fuel vehicles is premature in light of AB 1007 passage. [258]

Even though the bill does not call for the use of any particular "clean alternative fuel,"[259] bill supporters, such as the California Natural Gas Vehicle Coalition, acknowledge the reality that E85 is likely to be the first alternative fuel to meet the requirement in AB 1012. [260] Proponents envision AB 1012 will create an alternative fuel

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[252] *See* Cal. Sen. Transportation & Housing Comm., 2005-2006 Sess. (May 12, 2006), at 3, *available at* http://www.leginfo.ca.gov/pub/bill/asm/ab_1001-1050/ab_1012_cfa_20060512
[253] *Id.* at 3.
[254] *Id.* at 4.
[255] *Id.* at 4.
[256] Western States Petroleum Association (WSPA) is a non-profit trade association that represents approximately 30 companies that account for the bulk of petroleum exploration, production, refining, transportation and marketing in the six western states of Arizona, California, Hawaii, Nevada, Oregon and Washington. Founded in 1907, WSPA is the oldest petroleum trade association in the United States. *See*, WSPA website, http://www.wspa.org/about/index.htm#What
[257] *Supra* note 252, at 3.
[258] *Id.* at 4.
[259] *Supra* note 250 sec. Art 7 § 43872 (a)-(d)) (defines "Clean alternative fuels")
[260] *Supra* note 252 at 3.

market, regardless of which alternative fuel is promoted.[261] Once this is achieved, supporters believe it will benefit a range of alternative fuels and vehicles.[262]

Bill supporters argue that this bill provides for "creation of a critical mass of alternative fuel and technology vehicles necessary to establish the market conditions for the use of the environmentally friendly alternative fuels of the future and for further innovation in clean transportation technologies."[263]

Unlike Sen. Dayton's similar federal proposed measure, which languished at the Senate committee level, AB 1012 passed the committee level and continues through California's legislation process. On June 1, 2006, AB 1012 passed the State Assembly, by a vote of sixty-two ayes to twelve noes. Once in the Senate, the bill was referred to Senate Transportation and Housing Committee and the Senate Committee on Environmental Quality. While in the State Senate, the bill underwent a series of amendments. What emerged from the June 28, 2006 Senate version differs substantially from Assemb. Nation's proposed legislation.

To begin, key definitions were altered. The Senate version removes the specific reference to ethanol blends in gasoline or diesel from its definition section regarding clean alternative fuel, opting to use the more inclusive definition found in Subsection (a) of Sec. 43867.[264] In addition, the Senate's amended version defines "clean alternative vehicles" in a more expansive and inclusive manner. It identifies FFV as just one in a list

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[261] *Id.* at 3.
[262] *Id.* at 3.
[263] *Id.* at 3.
[264] AB 1012, sec.1, Art. 7.1 § 43887(a) (as amended on June 28, 2006), *available at* http://www.leginfo.ca.gov/pub/bill/asm/ab_1001-1050/ab_1012_bill_20060628_amended_sen.html. *See also.* West's Ann.Cal.Health & Safety Code § 43867, pt. 5, ch.4, art. 6.5. (Under said provision "Alternative fuel" means a nonpetroleum fuel, including electricity, ethanol, biodiesel, hydrogen, methanol, or natural gas that, when used in vehicles, has demonstrated, to the satisfaction of the state board, to have the ability to meet applicable vehicular emission standards. For the purpose of this section, alternative fuel may also include petroleum fuel blended with nonpetroleum constituents, such as E85 or B20)

of vehicles (i.e. hybrid, plug-in hybrid, compressed natural gas, and hydrogen fuel vehicle), which qualify as a clean alternative vehicle.[265]

In addition, the Senate amendments call for CARB to consider not only technological feasibility (which Assemb. Nation's original bill advocated) but also the economic feasibility when developing regulations to meet its target goal.[266] This change allows CARB additional flexibility in developing future alternative vehicle regulation. Under this provision, even if a proposed measure is technologically possible, economic restraints can create grounds for CARB refusal of said measure.

Finally, the most significant change comes in the form of the Senate's new target goal. The Senate's version rejected the Assemb. Nation's goal that all new passenger vehicles and light duty trucks offered for sale in California be capable of operating on clean alternative fuels, by January 1, 2020. The Senate bill requires only one-half of new vehicles and light trucks sold in California are clean alternative vehicles, by said date. [267]

Essentially, the Senate's revisions lessen the mandate for more FFV on California road for which ethanol usage is directly tied. And while Assemb. Nation proposed bill, favored ethanol powered FFV, the Senate's amended bill backs away from this approach. Instead, it stresses a more measured approach. One where economics factors such as alternative fuel available and capacity constraints play a more central role in developing regulation.

While AB 1012, looked to increase the number of FFVs on California roads, California Senate Bill 1511 (SB 1511) sets the goal of increasing the use of alternative

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[265] AB 1012, *supra* note 264, sec.1, Art. 7.1 § 43888(b)(1)-(6) (as amended on Jun. 28, 2006).
[266] *Id.* sec.1, Art. 7.1 § 43888(b)(1) (as amended on Jun. 28, 2006).
[267] *Id.* sec.1, Art. 7.1 § 43888(a) (as amended on Jun. 28, 2006).

fuel such as ethanol in the California transportation market.[268] In February 2006, Sen. Ducheny (co-sponsored by the California Renewable Fuel Partnership) introduced SB 1511. The proposed bill required CARB to amend existing state law provisions to increase the use of renewable fuel, in order to provided maximum flexibility for the year round use of renewable fuels and the increased fuel supplies from refineries. At the time of introduction, the bill sponsors deemed the bill an urgency measure, calling for it to be declared effective immediately.[269]

The California Renewable Fuels Partnership argued California's current fuel specifications are derived from a policy structured toward the use of 100% hydrocarbon gasoline as a means to move from MTBE.[270] The sponsor asserts that state legislators should now focus CARB to "design a fuel regulation that both protects air quality and gives maximum flexibility for the increased use of renewable fuels such as ethanol."[271]

The WSPA opposes this renewable fuel bill as well. The organization asserts that this bill would require refiners to create a "universal or base gasoline capable of being blended to ten percent ethanol." [272] WSPA suggested this legislation would "reduce the supply of gasoline in California [and] increase criteria pollutants (nitrogen dioxide, particulate matter, etc. are identified as criteria air pollutants)," while at the same time "divert capital investment away from projects to upgrade the state's refineries."[273]

Furthermore, opponents assert that this bill "would require more severe refining of petroleum to create cleaner CARBOB (California reformulated gasoline blendstock for

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[268] S.B. 1511, 2005-2006. Sess, (Cal. 2006)
[269] *Id* sec. Preamble, (as introduced on Feb. 23, 2006), *available at* http://www.leginfo.ca.gov/pub/bill/sen/sb_1501-1550/sb_1511_bill_20060223_introduced.html
[270] Cal. Sen. Trans. & Housing Comm., (April 13, 2006), at 3, *available at* http://www.leginfo.ca.gov/pub/bill/sen/sb_1501-1550/sb_1511_cfa_20060413_160538_sen_comm.html
[271] *Id.* at 3.
[272] *Id.* at 3.
[273] *Id.* at 3.

oxygen blending) in order to offset the potentially increased emissions from adding more ethanol."[274] Critics argue this would reduce the supply of California gasoline. According to Senate committee notes, this assertion raised the question, "should the bill be amended to direct CARB to consider supply, price, or economic impacts when making these changes to its fuel specifications?" [275]

Since its introduction, this bill has gone through several rounds of amendments as it works itself through the California legislation. Along the way it has gathered additional supporters as well as detractors.[276] On May 27, 2006, SB 1511 passed the Senate by a vote of thirty to four. However, the version leaving the Senate and moving to the Assembly differs from the initial proposed measure.

To begin, SB 1511 is no longer deemed an urgent bill.[277] Sen. Ducheny's bill asserted the proposed act required urgency statute "in order to help ensure, at the earliest possible time, that CARB is able to adopt regulations to increase the use of renewable fuels, and thereby protect public health and safety." [278]

The amended bill still requires CARB to adopt regulations, which increase the use of renewable fuel. However, the amended bill states the required CARB action can be incorporated, as part of the California Phase 3 Reformulated Gasoline (CaRFG3) program regulations update, previously scheduled for release in July 2007. With this firm date in place, the Senate deemed the urgency status unnecessary.

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[274] *Id.* at 4.
[275] *Id.* at 4.
[276] 20 Supporters of the May 26, 2006 version of SB 1511
[277] S.B. 1511(Amended May 26, 2006), *available at* http://www.leginfo.ca.gov/ pub/bill/sen/sb_1501-1550/sb_1511_bill_20060526_amended_sen.html (Urgency language struck from bill's preamble.)
[278] S.B. 1511, sec 2 §.(2) (as introduced on Feb. 23, 2006), *available at* http://www.leginfo.ca.gov/pub/bill/sen/sb_1501-1550/sb_1511_bill_20060223_introduced.html

Moreover, the original bill, which consisted of just over two pages, failed to give any guidance to CARB beyond the requirement to amend the noted regulation for the aforementioned purpose. The amended bill reiterates the original goal of amending California cleaner burning gasoline regulations to maximize the industry flexibility to use renewable fuels in the state transportation fuel market. However, the amended bill requires changes only if it is determined that:

> The amended California cleaner burning gasoline regulations are consistent with current law as provided in Section 43013 of the Health and Safety Code and maintain or improve upon the emissions reductions and air quality benefits achieved by the California Phase 2 Reformulated Gasoline program as of January 1, 1999, including emission reductions for all pollutants and precursors identified in the State Implementation Plan for ozone, and emissions of potency weighted toxics compounds, and particulate matter.[279]

On June 26, 2006, the State Assembly Committee on Transportation conducted hearing on SB 1511. At the hearing, WSPA continued to voice opposition to this measure as it has since the bill's inception. However, joining WSPA in opposition was South Coast Air Quality Management District (SCAQMD). According to SCAQMD, "ethanol at low concentrations has potentially higher VOC emissions but does not meet SULEV (super ultra low emission) NOx (oxides of nitrogen) emissions requirements."[280]

Furthermore, detractors assert SB 1511 has the potential to "require changes in California's gasoline regulations that will erode air quality gains that California has made

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[279] *Id.* sec 2, § (2)(b).

[280] Assemb. Comm. On Trans, Comm. Analysis (June 26, 2006), *available at* http://www.leginfo.ca.gov/pub/bill/sen/sb_1501-1550/sb_1511_cfa_20060623_130449_asm_comm.html

through the use of reformulated fuels."[281] Such critics suggest any revisions should be "focused on making air quality gains to alleviate the tremendous health problems caused by fuel combustion." Opponents cite past CARB studies and analysis, which indicate "even at existing levels of use, low level blends of ethanol result in significant unintended increases of air pollutants that contribute to smog formation, through evaporation and permeation."[282] Thus, they find it hard to understand "how CARB would be able to increase [ethanol] use without triggering adverse air quality consequences." Finally, critics complain the proposed legislation is premature because CARB is currently conducting a Predictive Model assessment. Accordingly, the study may yield results that are useful in relation to ethanol blend emissions. Consequently, they argue CARB should table any said revisions until the study is complete. [283]

Despite the noted criticism, SB 1511 received a pass vote (eight ayes to two noes) from the Assembly Transportation Committee and currently sits in the Assembly Committee on Appropriations awaiting action.[284]

The issue of funding alternative fuel research is address in pending Assembly Bill 2325 (AB 2325), introduced by Assemb. Nation. [285] AB 2325 as drafted would impose an additional tax of five cents per gallon to the current eighteen cents excise tax starting in January 2007. This surcharge would increase in five cents increment each year until 2011, at which time the tax would be set at twenty-five cents thereafter.[286] According to Assemb. Nation, the revenue generated from this measure will total $15.3 billion over a

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[281] *Id.* at 4.
[282] *Id.* at 4. (To review the California study) *See* Fuel Permeation From Automotive Systems Final Report (Sept 2004), *available at* http://www.arb.ca.gov/fuels/gasoline/permeation/090204finalrpt.pdf
[283] *Id.* at 5.
[284] Next hearing date set for Aug 8, 2006.
[285] AB 2325, 2005-2006. Sess, (Cal. 2006)
[286] *Id.* sec. 1, § 7361.1(a)(1)-(5).

five-year period, and subsequently $5.2 billion every year thereafter. The funding will be distributed in the following manner:

> (1) Fifty percent shall be allocated to the State Highway Account for the specific purpose of funding projects nominated by regional transportation planning agencies for the Regional Transportation Improvement Program (RTIP). The distribution would mimic the current process established under the State Transportation Improvement Program, but with 100% funding allocated to the RTIP. None of the new revenue would be used for the Interregional Transportation Improvement Program.
>
> (2) Twenty-five percent shall be allocated to the California Energy Independence Fund, which shall be used only for the purpose of funding the research and development of alternative energy resources.
>
> (3) Twenty-five percent shall be allocated to the California Energy Independence Rebate Fund, which shall be used only for the purpose of providing rebates to any consumer of an alternative fuel vehicle. [287]

The act attempts to lessen the bills impact on the State's poor by enacting section 17041.1. The section provides an exemption for any taxpayer with a gross income of less than an unspecified amount.

Section 3 of Article XIII A of California Constitution would apply to this proposed measure. According to this provision, "any changes in state taxes enacted for the purpose of increasing revenues collected pursuant thereto whether

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[287] FFV that can run on petroleum fuel blended with non-petroleum ingredients such as E85 or B20 meet the act's definition of alternative fuel vehicle and would qualify for the rebate program. *Id.* sec, 1, § 7361.1 (b)(2)-(3), *available at* http://www.leginfo.ca.gov/pub/bill/asm/ab_2301-2350/ab_2325_bill_20060406_amended_asm.html

by increased rates or changes in methods of computation must be imposed by an Act passed by not less than two-thirds of all members elected to each of the two houses of the Legislature."

In a hearing before the Assembly Committee on Transportation, committee members question the constitutionality of the proposed measure. Asserting while Article XIX of California Constitution reserves gas tax revenues for transportation purposes, this language has typically interpreted to mean the construction, operation and maintenance of streets and highways.[288] The committee notes Article XIX provision allowing excise tax on fuel to used for "research and operation of public streets and highways, including the mitigation of their environmental effects," but is uncertain if the terms operation and mitigation are expansive enough to encompass the proposed legislation.

Assemb. Nation argues that the definition is clear and allows gas funds to be used to mitigate the impacts of everything involving the operation of public roadways.[289] He states, "the road exists, cars with harmful emissions will use it. Thus, it is our job to ensure that the gas tax is used to promulgate the mitigation and find ways to lessen the environmental impact that the roads and everything that uses it. Alternative fuel research is one of those options."[290]

Once again, WSPA stand in opposition to this pro-ethanol measure. They note the existing tax scheme results in an approximately sixty cents per gallon fuel tax when combined with the federal and state excise taxes, plus the sales tax.

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[288] California Assembly Committee On Transportation, Committee Analysis (April 24, 2006), available at http://www.leginfo.ca.gov/pub/bill/asm/ab_2301-2350/ab_2325_cfa_20060421_162251_asm_comm.html
[289] *Id.* at 3
[290] *Id.* at 3.

While the nation's average is about forty-six cents per gallon. WSPA views the proposed tax measure as "excessive."[291]

Currently, the bill sits in both the Assembly Transportation and Revenue and Taxation committees.[292] Assemb. Nation aforementioned bill AB 1012, garnered a number of registered supporters, as it quickly moved through the Assembly house on its way to the State Senate. The same does not hold true for AB 2325. This remains true despite Assemblywoman Pavley presence on the Transportation committee. In recent years, she has been a strong supporter of alternative fuel measures.[293] Furthermore, the act has failed to garner any registered supporters and has not been set for any additional hearing in either committee.

2. What Do California's Measures Really Amount to?

California asserts that it is committed to addressing the problems oil dependency creates. Alternative fuel, in particular ethanol, will play a role in the State's plan to break its reliance. How big a part is still up for debate because a number of political and economic factors play a role in determining what the future holds for ethanol usage in California.

Although, a small contingent of state level politicians push an agenda geared toward ethanol use, a number of others policymakers question the wisdom of investing state capital in building the required ethanol infrastructure essential for a viable market. Critics point to California's limited ethanol production capacity and small ethanol distributions framework in making their case against

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[291] *Id.* at 4.
[292] As of June 29, 2006.
[293] Assemb. Pavley co-authored AB 1012 and authored AB 1007.

expanded ethanol use. Opponents speak of the economic reality in which Mid-western states stand in a superior supply position, in terms of both raw materials and refinery production capacity, to that of the California.[294] This is a reality, which in all likelihood will not soon change.

In addition, political infighting exists not only between ethanol supporters and state and regional fuel refiners and marketers (such as WSPA), but also among various environmental groups, some of which discount ethanol's environmental benefits.[295] Opposing environmental groups argue the focus should be on improving air quality. When improving air quality becomes the focus, it becomes clean that ethanol powered FFVs are inferior to other alternatively fueled vehicles, the likes of BEV and Hydrogen fueled AFV. They advocate that precious resources should be spent on promoting other technology over ethanol powered FFV initiatives.

Even when ethanol friendly legislation is adopted, it leads to the question of how best to finance ethanol promotion measures. Ethanol proponents grapple with this question.

In the face of all these and other mounting questions regarding how best to meet its goal of reducing oil dependency while protecting the environment. California appears to have taken a broad-spectrum approach, as evident in AB 1007. This approach requires the study of all available alternative fuels and clean

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[294]U.S. Sen. Feinstein (D-CA) asserts, "every state outside the Midwest will have to grapple with how to bring ethanol to their states since the Midwest controls ninety-nine percent of the production." *See.* Press Release, *Senator Feinstein Offers Amendment to Give States Ability to Choose Whether they Participate in the Ethanol Program* (Jun. 3, 2003), available at http://www.senate.gov/~feinstein/03Releases/r-ethanol03-2nd_degree.htm

[295]EV World, *The Sustainable Energy Myth called Ethanol*, (Jul. 7, 2005), http://www.evworld.com/view.cfm?section=article&storyid=1059

alternative vehicle technology before any measure is enacted. And while legislation has been proposed to promote ethanol, state politicians, appear hesitate to pass any legislation, which favors one alternative fuel over another, in the absence of thorough analysis.

While California takes a slow and steady stance in its approach to ethanol usage, several states, lead by Midwestern states, are moving full force with legislation that promotes ethanol use both as an fuel additive and in the E85 blend.

C. The Minnesota Plan

Minnesota serves as the model for many ethanol proponents. Over the past two and a half decades, the state has demonstrated a commitment to ethanol usage. Starting in 1980, with its passage of "the Blender Tax credit." [296] The credit provided four cents per gallon state tax credit on blended gasoline containing ten percent ethanol to retailer. [297] In the first year of the act, the state experienced a forty percent market share increase for E10.[298] But just as quickly as the boom came, so did the bust and within a few years the dramatic increase slowed.

Some attributed the decrease to the limited number of ethanol refinery plants located in Minnesota. [299] In an effort to address Minnesota's lack of ethanol production plants, the state enacted legislation converting half the tax exemption into a direct

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[296] The blender's tax credit was reduced over a period of years and finally phased out entirely in 1997. The blender's tax credit reduced revenues deposited in the highway user trust fund. *See* Minnesota House of Representatives House Research, The Ethanol Industry in Minnesota (Oct. 2002), *available at* http://www.house.leg.state.mn.us/hrd/issinfo/ssethnl.htm#E8

[297] Perry Aasness, Deputy Commissioner Minnesota Department of Agriculture (slide show presentation), Ethanol in Minnesota (2005), *available at* http://www.ethanol-gec.org/information/MN_biofuel_E-20.ppt

[298] *Id.*

[299] The Carbohydrate Economy, *Ethanol's Epic Journey*, Vol. No. 1, Issue No. 2, Winter 1998 *available at* http://www.carbohydrateeconomy.org/

payment of twenty cents per gallon for ethanol generated in state. [300] The act limited the payment to first fifteen million gallons created and set a cap of three million dollars per producer per fiscal year. [301] The act established a close out date of ten years after the start of production, with a program sunset date of June 30, 2010. The idea behind the limitation was to encourage the creation of small farmer-owned plants. [302]

In the 1980s, Minnesota viewed ethanol as a means to alleviate economy pressures stemming from a depressed corn price and staggering job loss in rural communities.[303] With the passage of the CAA of 1990, ethanol also was to be used to address environmental concerns posed by conventional gasoline.

The CAA of 1990 ushered in a new wave of ethanol legislation in Minnesota. As a result of the CAA of 1990 the St. Paul-Minneapolis (Twin Cities), Minnesota area found itself out of compliance with EPA carbon monoxide standards during the winter months. The areas non-compliance status required the need to use oxygenated fuel during the winter season, starting in the winter of 1992.[304] Minnesota responded by passing legislation enforcing the sale year round of 2.7 percent minimum oxygen content for the Twin Cities.[305] While the majority of the nation used MTBE to meet federal oxygenate fuel requirement, Minnesota choose to use ethanol exclusively to meet this obligation.

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[300] Minnesota Statute Chap. 41A.09, Subd. 3a.
[301] Minnesota Statute Chap. 41A.09, Subd. 3a.(c) and (d)
[302] The Carbohydrate Economy, *supra* note 299.
[303]Between 1984 and 1986, Minnesota loss 8,000 farms and 2/3 of corn crop exported as low-priced raw commodity. *See* Gene Hugoson, Commissioner Minnesota Department of Agriculture (slideshow presentation), Ethanol in Minnesota (2005), available at http://www.unr.edu/coba/logis/executive_education/GH%20Ethanol% 20Talk%206-05.pdf
[304] Minnesota Department of Agriculture, Economic Impact of Ethanol Industry in Minnesota (May 2003), available at http://www.energy.ca.gov/bioenergy_action_plan/documents/2006-03-09_workshop/2006-03-17_B_COLEMAN_REAP_MNETOHECONIMPACT.PDF
[305] *Id.*

In the 1990s, Minnesota continued to pass legislation to promote ethanol production. The State enacted the Ethanol Production Facility Loan Program, which provide up to $500,000 in direct loans to aid new ethanol production facilities during the start-up phase of construction and production. [306] This provision contributed to the creation of seven ethanol plants in the state.[307] The quest to aid local farmers transition from merely the raw commodity (i.e. corn) suppliers to owners of the ethanol production facilities was furthered by legislation passed in 1994. The act authorized the Rural Finance Authority to provide low interest loans to farmers for up to forty-five percent of the cost of the shares of stock in ethanol product processing plants. [308] Seven of Minnesota's ethanol plants in existence had investors who made use of these loans. [309]

Furthermore, in 1995, Minnesota established an in-state production goal of 220 million gallons. The current production goal of 360 million gallons will increase to 480 million gallons by 2008. [310] However, it was the passage of Minnesota Statute, Section 239.791, in 1997, which placed Minnesota at the vanguard of the ethanol use movement. The enacted legislation required all gasoline sold within the state to include ten percent ethanol (E10). The success of this measure, along with others, has resulted in Minnesota surpassing its goal. In 2005, Minnesota generated 420 million gallons of ethanol from sixteen plants.[311] Approximately, 260 million gallons were consumed in Minnesota.[312] Thus, Minnesota exported thirty-five percent of its annual ethanol production (roughly

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[306] Minnesota House of Representatives House Research, *supra* note 296.
[307] *Id.*
[308] *Id.*
[309] *Id.*
[310] *See* Minnesota Statute Chapter 41A.09 subd. 1a
[311] Ethanol Plants in Minnesota Annual report (April 2006), *available at* http://www.mda.state.mn.us/ethanol/plantsreport.pdf
[312] *Id.*

140 million gallons).[313] The state currently produces more than 550 million gallons of ethanol. [314] Despite, Minnesota's demonstrated success, it remained the only state requiring E10 use for nearly ten years.[315]

Not only is Minnesota a leader in E10 legislation but also serves as a pioneer in E85 usage measures. In 1998, the DOE selected the Twin Cities to participate in an E85 pilot program.[316] The Twin Cities program was the most successful of the selected cities.[317] The data gathered in the areas of ethanol–fueled FFV usage, E85 gallons consumed and fueling stations offering E85 around the Twin Cities and the state attest to the success of Minnesota E85 pilot program. As of 2005, usage of FFVs registered in the state reach nearly 150,000.[318] The state E85 consumption went from roughly 6000 gallons in 1997 to more than five million gallons in 2005.[319] Meanwhile, the number of E85 fueling stations ballooned from 11 to 205 in 2006.[320]

1. Recent Ethanol Legislation in Minnesota

With its record of success as a backdrop, in May 2005, Minnesota's Governor Pawlenty signed State Senate Bill 4 (S.F. 4) into law.[321] The act raised Minnesota's

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[313] *Id.*
[314] *Id.*
[315] As of the time of this paper, the following 4 states: Hawaii, Missouri, Montana, and Washington passed E10 requirement legislation. *See* David Morris, The New Ethanol Future Demands a New Public Policy (Jun. 21, 2006), http://www.ilsr.org/columns/2006/ethanolfuture.pdf.
[316] Denver, Co and Chicago, Ill were the other two cities selected. *See* Larry Hall, *supra* note 107.
[317] *Id.*
[318] Andrea Johnson, *Soaring gas prices boost E85 use*, Iowa Farmer Today (Nov 2005), http://iowafarmertoday.com/articles/2005/12/22/special_section/energy_and_ethanol/08eth-e85.txt
[319] *Id.*
[320] E85 proponent, such as Tim Gerlach, director of Outdoor Air Programs for the American Lung Association of Minnesota (ALA-MN), attribute the success of the E85 program to hard work and investments made by partners like the "Minnesota Corn Growers Association, NEVC, [Minnesota] state Department of Commerce, Minnesota state Energy Office and ALA-MN." *See* Wendy Fernstrum, *Spadework pays off now that the market is fertile for E85* (June 21,2005), http://www.mncorn.org/servlet/mcga/break/archive.iml?area_id=24&article_id=95104&display=Y&thispage=break/archive.iml
[321] S.F. 4, 84th Leg. Sess. (MN 2006). passed the State House by a vote of 91 to 43 and the Senate by a vote of 54 to 12.

minimum ethanol content requirement in gasoline to twenty percent, taking effect in 2013. [322] However, the act has a sunset date of December 31, 2010, if at that time the State Commissioner of Agriculture finds that twenty percent of the overall volume of gasoline sold in Minnesota is ethanol or approval has not been granted from the EPA for the use of E20 as gasoline.[323]

Thus, there are two methods to reaching Minnesota new twenty percent ethanol volume standard. One way is to increase usage of E85. Some industry proponent estimate Minnesota can reach its goal by increasing demand for E85 by a factor of 2.37 every year until the sunset date. [324] This marks the first enacted legislation that incorporates E85 use as a means to meet an ethanol content mandate. Proponents readily admit that in order to meet the twenty percent goal through this method, will require an increased number of FFVs and more service stations able to sell E85.[325]

The second method will require obtaining a 211(f)(4) approval from EPA. A process controlled entirely by the federal administrative agency. If granted the new measure would expand the definition regarding authorized gasoline to included a twenty percent ethanol blend.[326]

In 2005, the Minnesota Center for Automotive Research at Minnesota State University-Mankato conducted a limited study, which revealed "no drivability or material

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[322] *Id.* sec. 2 § 239.791, subd. 1a.

[323] *Id.* sec. 2 § 239.791, subd. 1(d)(1) and (2). *See* CAA § 211(f)(4) provision, which asserts if the EPA fails to act on an application within 180 days of its receipt of the application, the waiver shall be treated as granted. *See also*, S.F.4, sec. 2 § 239.791, subd. 1(d)(2), which states "the [USEPA] failure to act on an application shall not be deemed approval of the use of E20 or a waiver under section 211 (f)(4) of the [CAA]."

[324] Tom Web, *Ethanol Plans Threaten Corn Shortage*, Pioneer Press, (June 28, 2006), *available at* http://www.twincities.com/mld/twincities/business/14916259.htm

[325] *Id.*

[326] Wendy Fernstrum, *A Clean Win for Minnesotans*, (May 18, 2005), http://www.mncorn.org/servlet/mcga/break/archive.iml?area_id=24&article_id=94766&display=Y&thispage=break/archive.iml

compatibility problems experienced by fifteen vehicles of various years, makes and models using E30."[327] However, EPA will conduct more extensive tests prior to rendering a decision.

According to the Minnesota Department of Agriculture (MDA), in order to meet twenty percent ethanol blend requirement, the state would need to produce 572 million gallons of ethanol. [328] Although, Minnesota waits to see what will become of its E20 regulation, Minnesota ethanol industry continues to grow by leaps and bounds. Four current ethanol plants are expanding and expected to add 167 million gallons of capacity.[329] A plant currently under construction will produce fifty million gallons.[330] Furthermore, Minnesota Pollution Control Agency (MPCA) reports another six plants (slated to produce 585 million gallons of ethanol) are seeking permits.[331] MPCA officials indicate four more plants are probable with another four plants rumored to be in development.[332] The project capacity of those eight plants is 700 million gallons per year.[333] If all previous mentioned plants came on line, ethanol production could quadruple from 550 million to over two billion gallons. In 2005, ethanol production used one-eighth of Minnesota corn crop (approximately 200 million bushels of corn).[334]

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[327] CE News, *Minnesota Governor Signs Initiative to Double Amount of Ethanol in Gasoline by 2013*, (May 19, 2005), http://www.cleanedge.com/story.php?nID=3578

[328] According to MDA, 572 million gallons of ethanol figure is based on projected annual gasoline consumption growth trends from 2006 to 2012. *See* Ethanol Plants in Minnesota Annual report, *supra* note 311.

[329] Dennis Lien, *A Thirsty Fuel*, Pioneer Press (Jun 25, 2006), *available at* http://www.twincities.com/mld/twincities/14891310.htm

[330] Ethanol Plants in Minnesota Annual report, *supra* note 311.

[331] *Id.*

[332] *Id.*

[333] *Id.*

[334] *See* Tom Web, *supra* note 324.

However, if all the plants seeking permits were constructed, than forty percent of Minnesota's corn crop would be consumed.[335] Moreover, if all plants previously mention were built than ethanol production would use fifty-six percent of all corn grown in the state (approximately 707 million bushels of corn). [336] In addition to dramatic increase in corn crop usage, if all plants come on line, the water demand by this new ethanol industry would also quadruple (current demand of 2.5 billion gallons would rise to ten billion gallons a year.)[337]

This legislation received nearly unanimous support in both the State House and Senate along with that of the Governor.[338] But the new law was not without its critics. SF4 opponents railed against nearly every aspect of the enacted measure. [339] They questioned whether the law will "help Minnesota achieve greater energy independence," whether the E20 mandate "is good for the environment," and if the law will "boost income for the average Minnesota corn growers." [340] Opponents conclude the act will not achieving any of these goals.[341] Supporters of the measure, counter with statistics indicated tremendous profits for the state in tax revenue and to individual farmers. [342] The debate prompts the question, is Minnesota's ethanol prosperity too good to be true?

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[335] *Id.*
[336] *Id.*
[337] Dennis Lien, *supra* note 329.
[338] Iowa Renewable Fuels Association Newsletter (Apr. 2006), http://www.pinelakecorn.com/Doc/GTN%204-17-06.pdf
[339] Annette Meeks, *Many Reasons to Oppose New Ethanol Mandate* (Feb. 1, 2005) Star Tribune *available at* http://www.americanexperiment.org/publications/2005/20050201meeks.php
[340] *Id.*
[341] *Id.* (Ms. Meeks article asserts "Ethanol use raises emissions of nitrogen oxides, which is a contributor to the formation of smog. Increased smog levels in Minnesota is a growing concern.")
[342] Iowa Renewable Fuels Association Newsletter ,*supra* note 338.

2. Is Minnesota's Ethanol Prosperity To Good To Be True?

With the anticipated steep escalation in corn consumption and water use for ethanol production, a growing number of critics raise concerns that there will not be enough grain to sustain other state industries dependent on corn (i.e. food and feed). Food industry giant, Cargill CEO calls for a "hierarchy of value for agricultural land use: food first, then feed, and last fuel."[343] Ethanol proponents insist, "There is plenty corn to go around," however, they readily admit that Minnesota's corn export may be affected.[344] It is this diminished export capacity that maybe cause for alarm. States like Iowa (the nation's number one corn producing state) are facing even greater strain on their corn crop supply. Iowa has fifty-five ethanol plants open or proposed.[345] According to Iowa State University economist Bob Wisner, "if all these plants are built, it would use virtually all the Iowa corn crops."[346] Furthermore, in South Dakota three-fourth of the state's corn is used for ethanol. [347] Nevertheless, states such, as Washington, which have little corn production, are constructed ethanol plants. This leads to the question, where will such plants get corn?

Iowa State economist Wisner predicts corn price will increase "to whatever it takes to buy the additional acres. Thus, if the price is right farmers will plow up existing farmland and change crops to corn to meet the demand."[348] Organizations, such as Iowa

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[343] Cargill is one of the nation's largest providers of food, agricultural products and services. With 149,000 employees in 63 countries, it reported 71 billion dollars in sale in 2005. It is also one of the nation's largest providers of ethanol. *See* Cargill's website, http://www.cargill.com/products/industrial/br_ethanol.pdf (Regarding its ethanol program). *See* http://www.cargill.com/about/financial/financialhighlights.htm #TopOfPage (Regarding financial information)

[344] Tom Web, *supra* note 324.

[345] *Id.*

[346] *Id.*

[347] *Id.*

[348] *Id.*

Corn Growers Association (IGCA) assert that fears regarding corn shortage for livestock feed are unfounded. They argue that ethanol production uses only the starch of the corn kernel. [349] "All of the valuable protein, minerals and nutrients remain."[350] The organization indicates one bushel of corn produces about 2.7 gallons of ethanol and 11.4 pounds of gluten feed (twenty percent protein), along with three pounds of gluten meal (sixty percent protein) and 1.6 pounds of corn oil. [351] Dr. David Morris, of the Institute for Local Self-Reliance, argues that the distilled grain produced as a result of ethanol process is a high quality animal feed because of its concentrated protein levels.[352] This byproduct or (what he refers to as co-product) can be use as a corn substitute to meet animal feed needs. He goes on to advocate that the world is not "dying from a shortage of starch...if there is a shortage of anything than it is protein."[353]

D. The Iowa Approach

While Minnesota has adopted the twenty percent ethanol contact approach, Iowa has taken a different path. Its Renewable Fuel Standard (IRFS) would focus on raising the aggregate use of renewable fuels, rather than requiring a certain level of ethanol to be blended into gasoline. Iowa leads the nation in corn and ethanol production.[354] With the passage of the IRFS, Iowa seeks to lead the nation in ethanol usage.

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[349] Iowa Corn org, *Ethanol Myths*, *available at* http://www.iowacorn.org/ethanol/ethanol_3b.html
[350] *Id.*
[351] *Id.*
[352] Dr. Morris Address at Renewable Energy Research Conference, *supra* note 1.
[353] *Id.*
[354] *See* ENS, *Minnesota Aims to Be Saudi Arabia of Renewable Fuels*, (May 2005), http://www.keepmedia.com/pubs/EnvironmentNewsService/2005/05/18/863532?extID=10037&oliID=229. (Regarding Iowa's ranking in ethanol production). *See* The World of Corn, *supra* note 196. (regarding Iowa's corn production)

In May 2006, Iowa's Governor signed into law House Bill 2754 (HB 2754). The law enacts many of the measures pro-ethanol U.S. Congresspersons have pending on the hill. The centerpiece of the act calls for replacing twenty-five percent of all petroleum used in the formulation of gasoline in the state with biofuel by 2019.[355] Pro-ethanol organizations praise the act proclaiming it to be "the most aggressive renewable fuel standard in the nation."[356] The act envisions reaching its goal primarily through incentives geared toward retailers.

As enacted, the law continues the current 2.5 cents income tax credit available to retailers on gallons of ethanol blends sold in excess of sixty percent of their total volume until December 31, 2008. At which time, in an effort to assist retailers in meeting the IRFS schedule, starting in 2009, an Ethanol Promotion Tax Credit replaces the current incentive.

The new measure applies for each gallon of ethanol sold and is determined by the retailer's achievement of the RFS schedule. Under the plan, retailers reaching the RFS for a given year are entitled to a 6.5 cents tax credit on every gallon sold. Retailers who are within four percent or less are can receive a credit at a reduce rate.[357]

A new E85 Promotion Tax Credit provision applies to every gallon of E85 fuel a retailer sells. Under the provision, an E85 promotion credit of twenty-five cents per gallon is in effect for 2006, 2007, and 2008. In 2009 and 2010 the amount drops to

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[355] H.B. 2754, 81st Gen. Assemb., 2d Sess., Sec. 39, §422.11N (4)(b)(1)(k) (IA 2006). The act defines "biofuel" as only ethanol or biodiesel. Absent from the definition are the mention of any other alternative fuels (i.e. electricity, and hydrogen). The act includes biodiesel usage along with ethanol use when tabulating whether the twenty-five percent goal is reached. *See* H.B. 2754, at Sec. 2 § 214A.1 (1)(c) This paper examines only the ethanol related components of this legislation.

[356] National Ethanol Vehicle Coalition, Press Release, *Iowa Governor Signs E85 bill* (May 31, 2006), *available at* http://www.e85fuel.com/news/053006_ia_e85bill_release.htm

[357] *Supra* note 355, at Sec. 39 § 422.11N(5)(1)-(2)

twenty cents per gallon. Starting in 2011, the tax credit is ten cents per gallon and is reduced one penny each year until phased out of 2020.[358]

In an effort to simulate infrastructure, the act allots thirteen million dollars over three years, in grant money. Under the cost-share grants, retailer who upgrade or install new E85 equipment can receive fifty percent of the total cost of the project up to $30,000 back.[359]

Furthermore, the Act establishes the Renewable Fuels Infrastructure Board. The eleven-member board is granted the authority to determine the eligibility of grant applicants. Agribusiness will control four sits on the board, and includes a representative from the Iowa Corn Growers Association (ICGA).[360] Even though, Iowa leads the nation in corn production as well as ethanol production, it ranks third in E85 service stations capacity. Proponents of the bill look to change this fact.

VI. Asking the Hard Question: Is Ethanol the Cure?

For states like Minnesota and Iowa ethanol seems to hold all the answers. It provides jobs to rural communities. [361] It provides revenue to the state. It opens additional markets for the state's chief agriculture crop (corn) and it increases the value of that crop.[362] But the question posed is not what will help cure the Midwest's economic problems but what will free the nation from its oil dependence.

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[358] *Id.* at sec. 40 § 422.110(3)(a)-(1)
[359] *Id.* at sec. 30 § 15G.116(7)
[360] *Id.* at sec. 29 § 15G.115(2)(a)-(c)
[361] More than 3,700 Iowa jobs are currently created by Iowa's ethanol industry. Plant under construction or proposed are project to create another 1,430 jobs. At the 550 million-gallon production level, Minnesota's ethanol industry will generate 6,400 jobs and an estimated $1.72 billion in total economic impacts. *See* Iowa Department of Agriculture and Land Stewardship, The Office of Renewable Fuels and Co-Products, *Ethanol Facts*, *available at* http://www.agriculture.state.ia.us/ ethanolfacts.html (Regarding job growth in Iowa). *See.* Ethanol Plants in Minnesota, *supra* note 311.
[362] Adds approximately $910 million to the value of the state's corn crop. *See* Iowa Department of Agriculture and Land Stewardship, *supra* note 361.

Ethanol, while it may be part of the solution, falls short of being the cure. This is a fact that even ethanol supporters have acknowledged.[363] However, ethanol can play a role in freeing the nation from its addiction. But how best to use ethanol to reach the nation's goal of greater independence leads to more questions than answers. Should ethanol be used as a fuel replacement formula (i.e. E85) or primarily in a fuel extender blend (i.e. E10)? And should that choice be applied to the whole nation or just the most cost effective regions? How will a federal mandate impact states, which seek to impose their own ethanol requirements? And where will all the ethanol come from to fuel the country's energy demands? And what environmental effects will increase ethanol production have on the farmlands of the Midwest and to the air of the cities where it will be consumed? Where will the natural gas and water come from? These are just a few of the multitude of questions this issue creates. The answers to which are not simple.

Of the approaches discussed in this paper, it is California's full spectrum approach, which holds the most promise for freeing the nation from its oil dependence. To begin, California mirrors the position the majority of the nation finds itself when it comes to ethanol. It consumes far more ethanol than it creates. It lacks the means to create significant quantities of ethanol which forces the state to either import vast amounts of ethanol or look to other renewable energy sources to met its goal of thirty percent reduction in petroleum use. Under the California approach, ethanol is viewed as just one of a number of sources. The California plan appears to establish a transportation portfolio position. Focusing its attention on developing a plan in which all alternative fuels such as electricity and hydrogen can be use to meet the goal.

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[363] David Morris, *supra* note 1.

Promoting technology such as E85 powered FFVs is consistent with this approach. For, it is the automakers that are saddled with the burden of creating such vehicles and not the state. As for the cost to create these vehicles, the population could easily absorb the relatively small increase in vehicle price. However, establishing a viable E85 infrastructure is highly unlikely at this time under California's approach. Even if every vehicle on the road were an E85 FFV, it would still require both a complete overhaul of the current distribution system (i.e. retrofitting pipelines and storage tanker to hold and transport E85 blend to dispensers), and moreover, it would require tremendous amounts of affordable ethanol to make this solution a reality. Without the latter, creating the E85 framework appears to be an expensive and fruitless venture for states such as California.

Adopting the California approach would not preclude Midwest states from moving forward with E85 initiatives. To the contrary, California's approach does not dictate which alternative fuel or technology need be employed to reach the target reduction. Therefore, ethanol rich states like Iowa and Minnesota can reach the thirty percent reduction goal primary through the use of ethanol.

The problem with the California approach is that it takes time and money to develop, which are luxuries the nation lacks. In addition, the plan could ultimately require automakers to make significant changes to their vehicle (i.e. develop tri-fuel vehicles) which automakers have been extremely reluctant to do in the past.

However, Iowa's twenty-five percent RFS and Minnesota's ethanol E20 approaches seem impractical on a national scale. The laws of supply and demand are against a nationwide E20 standard or twenty percent RFS. In states like Iowa and

Minnesota, which lead the nation in ethanol production and have an abundance of raw materials in which to produce ethanol, reaching prescribed ethanol usage goals will be obtainable. Moreover, such states generate a sufficient ethanol surplus so that E85 use is a possibility.

However, Iowa and Minnesota are in the minority. The vast majority of states find themselves in a position akin to California. Refiners in states such as Virginia, Florida and New York with severely limited or no ethanol production will be forced to buy their required amount from suppliers in ethanol rich states. Escalating transportation cost coupled with requirement to consume increasing quantities will result in tremendous price increase for said refiners. This cost will be past on to the consumers in those states. This will lead to skyrocketing gas prices in those regions.

As ethanol rich states continue their push for more E85 FFV use, even less ethanol will be available on the market. In order to meet the standard, the issue of lifting ethanol tariffs will be revisited. While lifting the tariffs and allowing increased ethanol imports may garner some relief for said sections of the country, it would amount to replacing foreign oil dependence with foreign ethanol dependence. Replacing one addiction with yet another would seem contra to the profess goal of energy independence.

Looming in the background is the federal governments credit-trading program. Under this provision of the EPAct of 2005, the California approach will be more economically advantageous to non-ethanol rich states in comparison to the Minnesota or Iowa approach. To begin, former RFG areas (to which most of California falls under) would still be required to use ethanol in order to meet state air pollution standards or yet to be developed federal anti-backsliding measures. In RFG states, the credit-trading

provision would be applicable in the void between the minimum amount required to meet clean air standards and the established RFS. Higher RFS will result in more ethanol use in non-ethanol rich states. More likely it will lead to higher gas prices as refiners attempt to acquire increasing amounts of ethanol or ethanol credits from ethanol rich states. Thus, it will do little to lower the cost of gasoline or solve the nation's addiction.

V. Conclusion

Ethanol may not be the silver bullet, which will solve the country's foreign oil dependence. However, if used in conjunction with other technology, such as hybrid vehicles, it can help usher in the end to the nation's foreign oil addition.